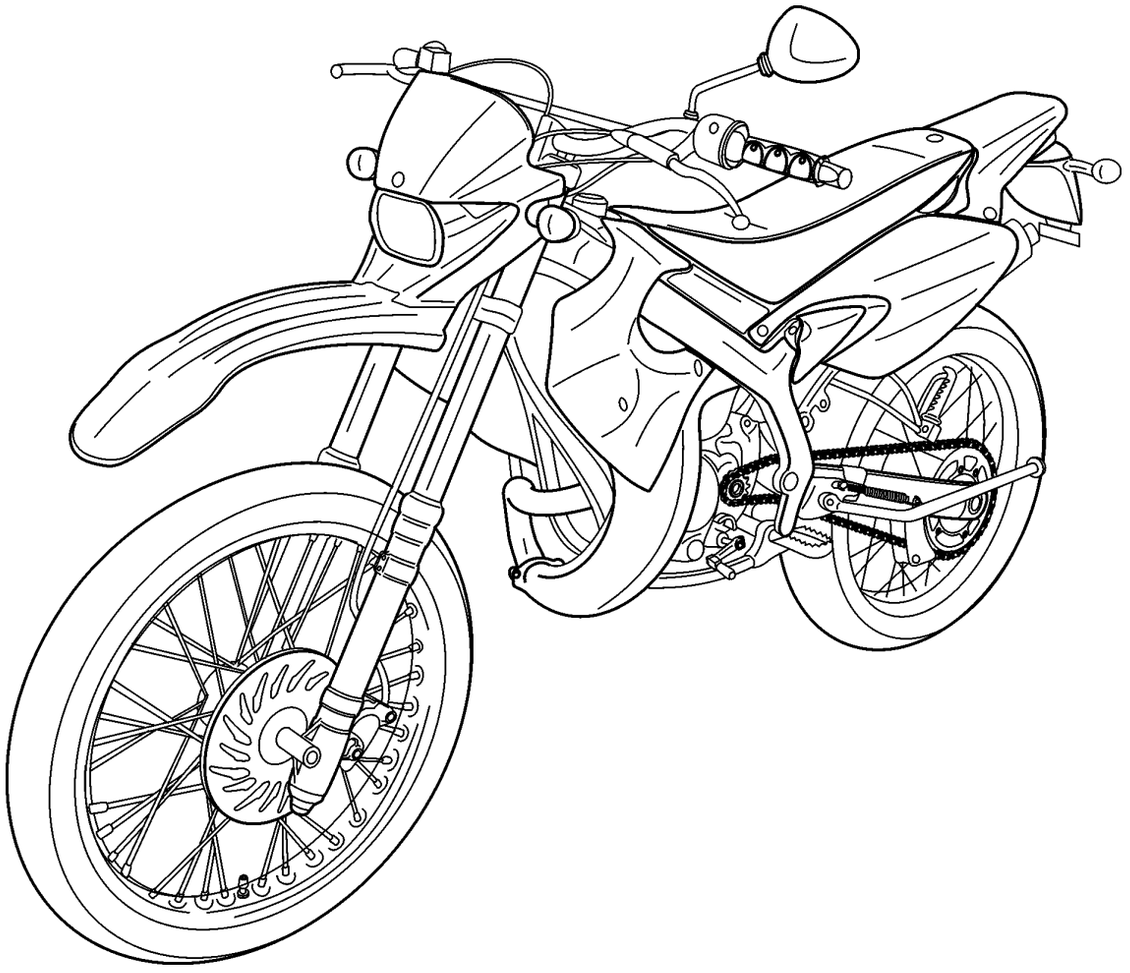
Malaguti
IDEE IN MOTO

A

CHASSIS



XTM - XSM

WORKSHOP MANUALS

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ENGLISH

INTRODUCTION

- **This Workshop Manual** describes the main electrical/mechanical checks, the essential checks, and the assembly of components supplied disassembled, in order to deliver a brand new motorcycle (the sequence of operations is not binding).

- **It is essential** to follow the instructions with great care. Work carried out carelessly or, worse still, work that has not been accomplished, can cause injuries and damage or, in the less serious cases, tiresome complaints.

"Schedules" (frequency of operations to accomplish during the guarantee period).

Note:
These manuals provide the necessary information and instructions for routine maintenance and servicing. This information has been given to us by the engine manufacturers. We therefore decline all responsibility for any error, omission or misrepresentation.
MALAGUTI reserves the right to make any changes and modifications hereto it deems necessary without prior notice.
For further information and details, please contact the Malaguti S.p.A. Service Division.

ENGLISH

MANUAL UPDATES

- Updated **pages** of this publication will be delivered by us (in a reasonable time) already punched and therefore ready to be incorporated in the Manual. The superseded sheets should not be removed from the manual as they remain applicable to the servicing of pre-modified engines.

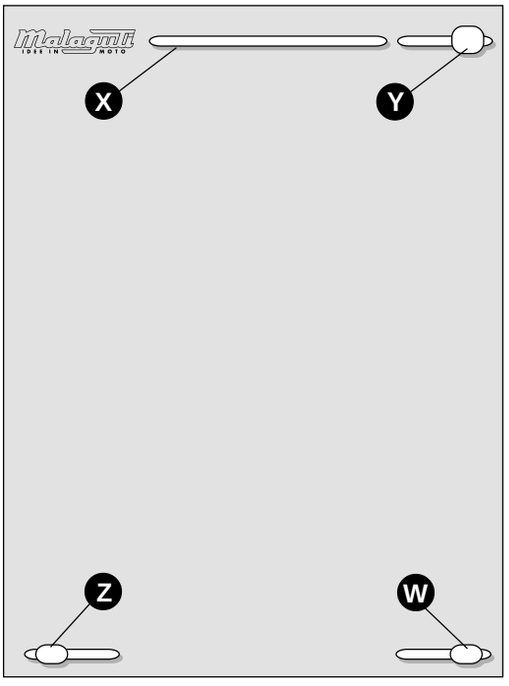
- The **table of contents** will be duly updated in the event that new pages are inserted, which render the consultation of the manual difficult.

- **IMPORTANT!** The Workshop Manuals are to be considered as essential **tools** to be properly kept up-to-date so as to maintain their *"validity"* over time.

NOTES FOR EASY CONSULTATION

PAGE LAYOUT

Y	Chapter
X	Section title
W	Page n°
Z	Date of issue



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MODIFIED PAGES

- Modified pages shall bear the same number as those in the previous edition /pre-modified ones, followed by the letter **M**, with the **date of issue** appearing in the appropriate box.

- Modified pages may contain new illustrations; in this case, the added illustration (or illustrations) will bear the number of the illustration on the former page, followed by a letter.

ADDITIONAL PAGES

- Any additional pages shall bear the last number of the section to which they belong, followed by the letter **A** and the **date of issue**.

EDITING SYMBOLS

- Symbols have been provided for **quick and easy reference** (see page 9), identifying situations requiring utmost attention or providing practical suggestions or simple information.

- **These symbols** may appear **next to a text** (in which case they refer solely to the text itself), **next to a figure** (in which case they refer to the topic illustrated in the figure and to the relative text), or **at the top of the page** (in which case they refer to all the topics dealt with in the page).

Note:
*The meaning of the symbols should be duly memorised as their scope is to avoid having to repeat basic technical concepts or safety recommendations. They are therefore to be considered as veritable **"memory tags"**. In case of any doubt as to their meaning, consult the page in which they are fully described.*

ABBREVIATIONS

F	Figure
Cs	Tightening torque
P	Page
Pr	Paragraph
S	Section
Sc	Diagram
T	Table
V	Screw

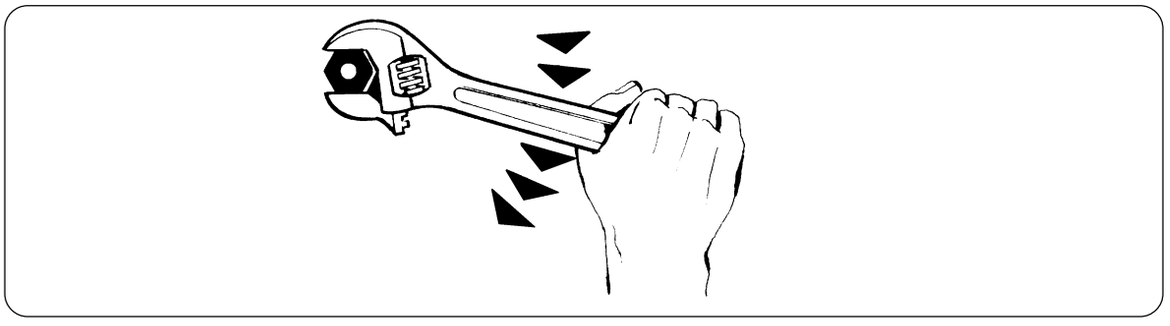
Note:
the letter **V** in the illustrations refers to retaining or adjusting screws. The **number** following this letter refers to the number of the same type of screw in the unit or component described and illustrated. Letters **not followed by a number** indicate a **single screw**. In case of **different screws** being referred to in the illustration, the letter **V** is followed by a **number** and a **small letter**, for instance: **(V4a)**.
Unless otherwise specified, units and components are reassembled by proceeding in the **reverse order** of removal.

GENERAL WORK PROCEDURES

• The **advice**, **recommendations** and **warnings** given hereafter are aimed at ensuring maximum work safety as well as at considerably reducing the risk of accidents, personal injury, equipment damage and idle times. They should therefore be strictly adhered to.

ADVICE:

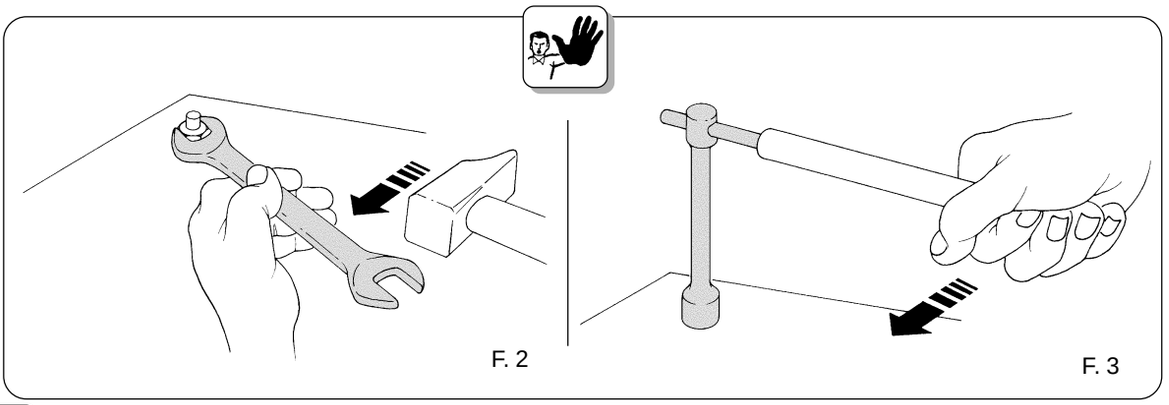
• Only use quality tools and equipment.
• Only use equipment conforming to EU Directives for lifting the vehicle.
• During operations, always keep tools and equipment at hand, possibly laying them out according to the sequence in which they are to be used. Absolutely avoid putting them on the vehicle itself, out-of-sight or in poorly accessible places.
• Always keep the work area clean and tidy.
• When tightening screws or nuts, start with the **larger diameter** or inner fasteners, and tighten them in progressive **"pulls"** in accordance to a **"criss-cross"** pattern.
• Preferably use open-end box wrenches by **"pulling"** and not "pushing".
• Adjustable wrenches (F. 1) should only be used in case of emergency, i.e. when a properly sized wrench is not available. they should preferably not be used as the movable jaw tends to open thus risking damaging or not properly tightening the bolt to the correct torque.In any case, when using an adjustable wrench, take care to proceed as shown in Figure 1.
• Except for occasional customers, always make out and deliver to the customer a **work sheet** specifying the operations performed, with notes as to any future checks eventually required.



F. 1

RECOMMENDATIONS:

• **Before carrying out** any operation on the vehicle, wait for **all parts to cool down**.
• For operations requiring two mechanics, make sure that the various steps to be performed by each of them are clearly defined and coordinated beforehand.
• Make sure that each component has been properly fitted before proceeding with the next one.
• Lubricate all parts (where applicable) before reinstalling them.
• Gaskets, O-rings, circlips and split pins **must be replaced** at every refitting.
• The torque settings specified in the manuals refer to the **"final torque"**, which must be attained progressively by steps.
• Loosen and tighten aluminium alloy parts (covers) only after ***the engine has fully cooled down***.
• Only use screwdrivers with sizes suitable to the screws to be loosened or tightened.
• **Work in a comfortable position and ensure that the vehicle is stable.**
• Never use a screwdriver as a lever or chisel.
• Never use pincers to loosen or tighten screws or nuts because, in addition to not providing a sufficient clamping force, they may also damage the screw head or nut hexagon.
• **Never tap the wrench with a hammer** or other similar tools to loosen or tighten screws and nuts (F. 2).
• **Never attempt to increase the lever arm** by fitting a tube into the wrench (F. 3).



F. 2

F. 3

Never use open flames for any reason.

Never leave open containers or containers not suitable for holding fuel in passageways, close to heat sources, etc

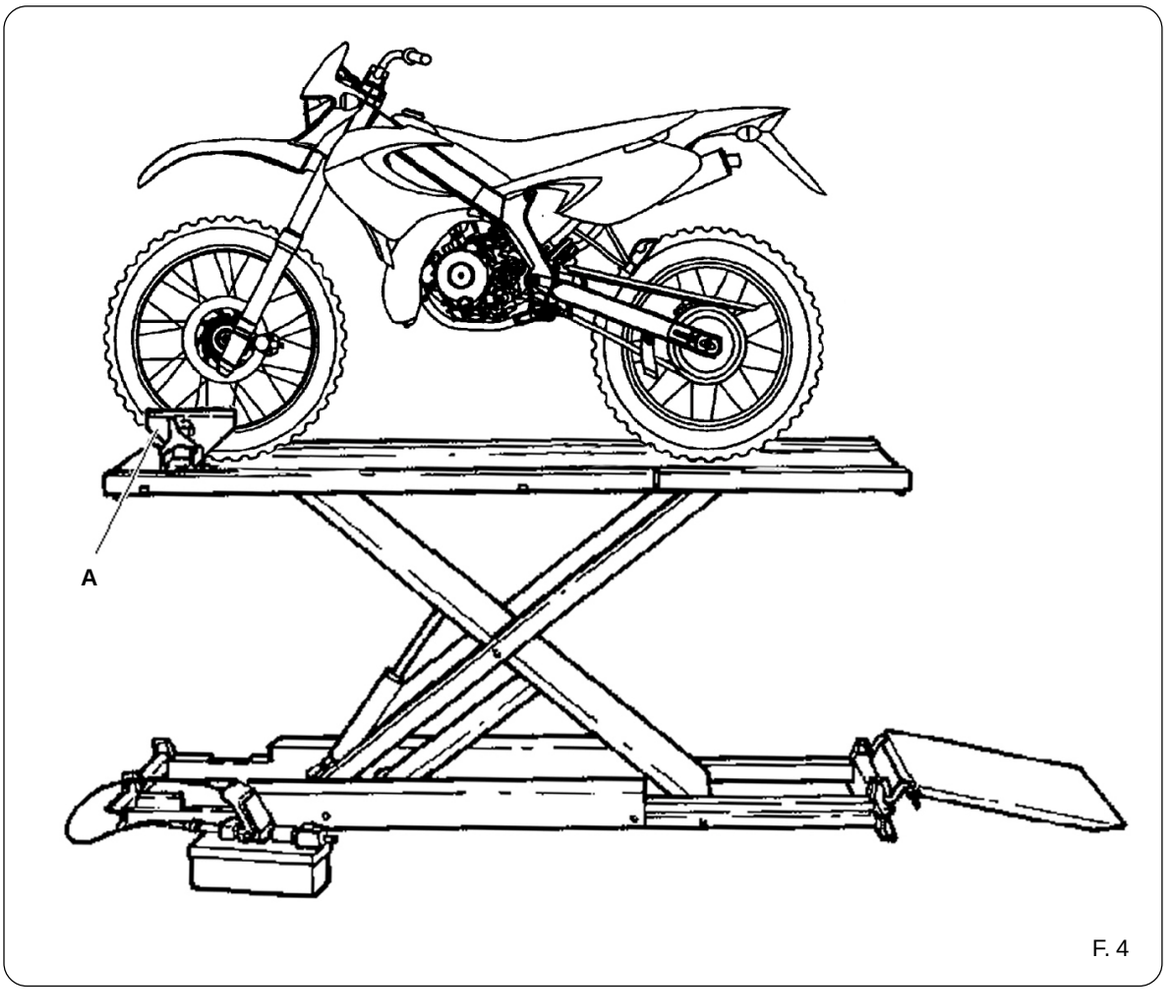
Never use petrol to clean the vehicle or the floor of the workshop. Always use low flash point solvents to clean the vehicle components.

Never suck from or blow into the fuel pipe.

When welding, make sure that there are no flammable liquids in the vicinity. Always remove the tank, even if completely empty, and disconnect the negative cable (-) from the battery.

Never leave the engine running in closed or poorly ventilated areas.

Before any servicing, make sure that the motorbike is perfectly stable.
The front wheel should preferably be anchored to the equipment (A - F.4) integral with the lifting board.



F. 4

EDITING SYMBOLS

A) CAUTION!
Recommendations and precautions regarding rider safety and motor vehicle integrity.

B) WARNING!
Situations entailing the risk of personal injury to maintenance or repair mechanics, other workshop personnel or third parties, or damage to environment, vehicle or equipment.

C) FIRE HAZARD
Indicates operations which may constitute a fire hazard.

D) RISK OF EXPLOSION
Indicates operations which may constitute a risk of explosion.

E) TOXIC FUMES
Indicates a possibility of intoxication, inflammation or corrosion.

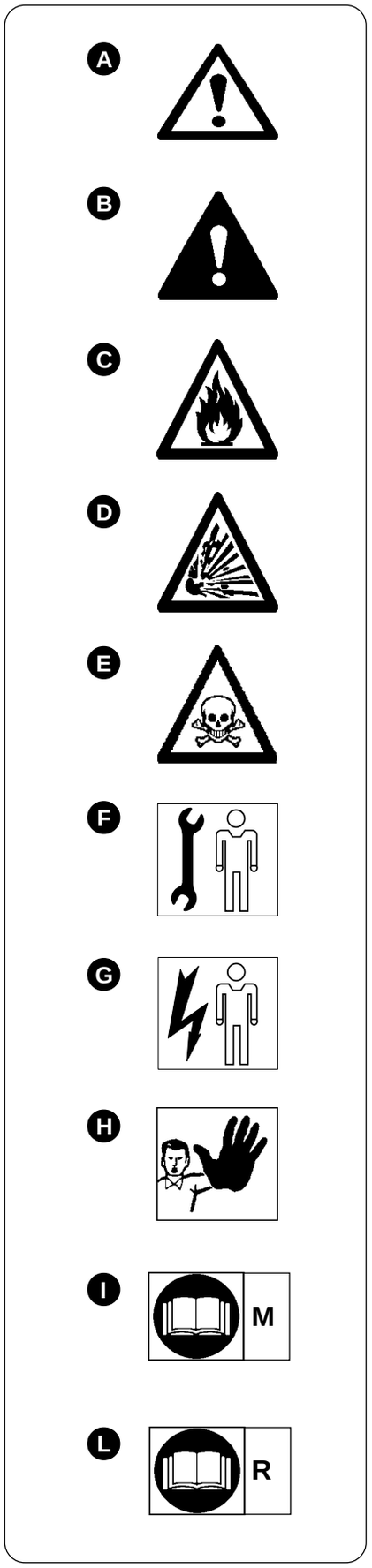
F) MECHANICAL MAINTENANCE
Operations to be performed only by an expert mechanic.

G) ELECTRICAL MAINTENANCE
Operations be performed only by an expert electrical/electronic technician.

H) NO!
Operations to be absolutely avoided.

I) ENGINE SERVICE MANUAL
Indicates information which may be obtained by referring to said manual.

L) SPARE PARTS CATALOGUE
Indicates information which may be obtained by referring to said catalogue.



ENGLISH

SPECIFICATIONS

Model:	ENDURO	SUPERMOTARD
Dimensions:		
Length	2050 mm	2000 mm
Width	850 mm	
Height	1160 mm	1115 mm
Wheel base	1350 mm ± 20	
Seat height	910 mm	880 mm
Minimum ground clearance	345 mm	315 mm
Minimum turning radius	2320 mm	2240 mm
Front wheel stroke	190 mm	
Rear wheel stroke	220 mm	
Weight:		
Kerb weight	104 kg	
Maximum load	160 kg	
Engine:		
Type	2-stroke, liquid-cooled	
Cylinder arrangement	single-cylinder, vertical	
Displacement	49 cm^3	
Bore x stroke	40.3 x 39 mm	
Compression ratio	12:1 ± 0.5	
Starting system	Kickstarter	
Lubricating system	separate lubrication	
Type of oil:		
Engine oil	semi-synthetic oil, according to API TC TS C3 standards	
Total amount	1.1 L	
Transmission oil	SAE 10W30 type SE	
Total amount	0.82 L	
Fuel:		
Type	RON 91 premium grade unleaded petrol	
Fuel tank capacity	6.5 L	
Reserve amount	1.8 L	
Carburettor:		
Type	PHBN 16	
Manufacturer	DELL'ORTO	
Chassis:		
Chassis	welded steel tubular bar.	
Caster angle	28°	
Spark plug:		
Type	BR9ES	
Manufacturer	NGK	
Electrode gap	0.6 ~ 0.7 mm	
Clutch	mechanical, multiple disc, oil-bath type	
Air filter	sponge, 45ppi	
Cooling system		
Type	water-cooled	
Antifreeze-water mixture ratio	1:1	
Total amount	0.55 L	

Model:	ENDURO	SUPERMOTARD
Transmission:		
Primary reduction system	helical gears	
Primary reduction ratio	z71 / z20 (3,55)	
Secondary reduction system	chain drive	
Secondary reduction ratio	z50 / z11 (4,54)	z48 / z11 (4,36)
Transmission type	mechanical, 6-speed	
Type	left foot	
Gear ratio:		
1st speed	z12 / z36 1:3	
2nd speed	z16 / z33 1:2.06	
3rd speed	z19 / z29 1:1.52	
4th speed	z22 / z27 1:1.23	
5th speed	z24 / z25 1:1.04	
6th speed	z25 / z24 1:0.96	
Tires:		
Type	with tube	
Front	80/90-21 48P	100/80-17 52S
Rear	110/80-18 58P	130/70-17 62S
Manufacturer	PIRELLI	
Tire pressure (ambient temperature):		
Front 0 ~ 90 kg	2.0 bar	
Rear 0 ~ 90 kg	2.2 bar	
Front 90 kg ~ max. load	2.0 bar	
Rear 90 kg ~ max. load	2.2 bar	
Brakes:		
Front	hydraulic disk type Ø240 mm	hydraulic disk type Ø259 mm
Calipers	with two pistons	
Operation	right hand operation	
Rear	hydraulic disk type Ø218 mm	hydraulic disk type Ø218 mm
Calipers	with two pistons	
Operation	right foot operation	
Suspensions:		
Front	telescopic fork	
Max. stroke	190 ± 2 mm	
Rear	swingarm	
Max. stroke	44 ± 2	
Electrical equipment:		
Ignition system	C.D.I. control unit.	
Generator, rated power	FLYWHEEL MAGNETO, 95W	
Type of battery	calling for maintenance	
Battery capacity	12 4 Ah	
Fuel sensor	electrical floating probe	
Horn	12 V DC	
Lights		
Headlight	12V 35/35 W	
Tail-light	12V P21/5 W	
Indicators front/rear	12V 10W x 4	
Indicator lights	LED	
Parking light	12V 4W (Switzerland version only)	
Low beam indicator light	12V 1,2W (Switzerland version only)	
Number plate light	12V 5W (Switzerland version only)	

ENGLISH

UNPACKING

• Unpack the motorcycle following the instructions printed on the pack, which must be disposed of in accordance to the laws in force.

APPEARANCE CHECK

• Make sure all plastic components have been correctly fitted. In particular check the vehicle for scratches, marks, etc.

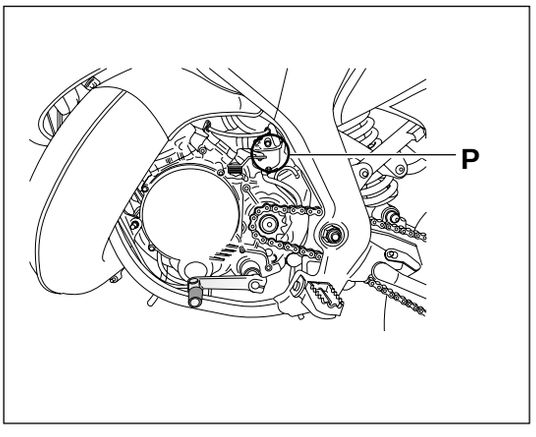
REGISTRATION DATA

ENGINE REGISTRATION NUMBER

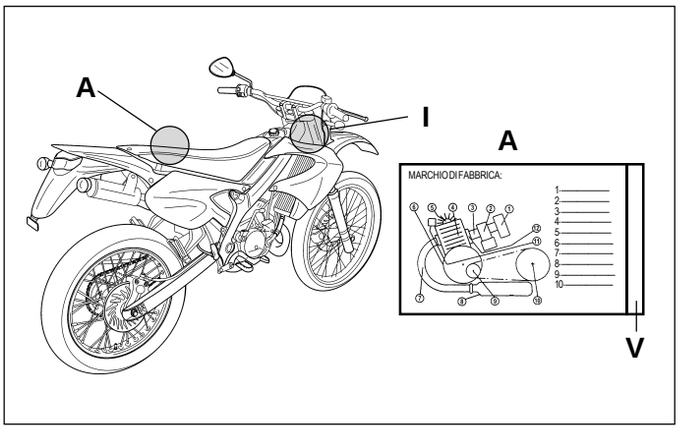
Engine registration data (P - F.1i) is on the left crankcase.

VEHICLE REGISTRATION NUMBER

The vehicle's registration number (I - F2i) is stamped on the steering rod. The vehicle registration number is used to identify the motorcycle.



F.1i



F.2i

ANTI-TAMPERING LABEL

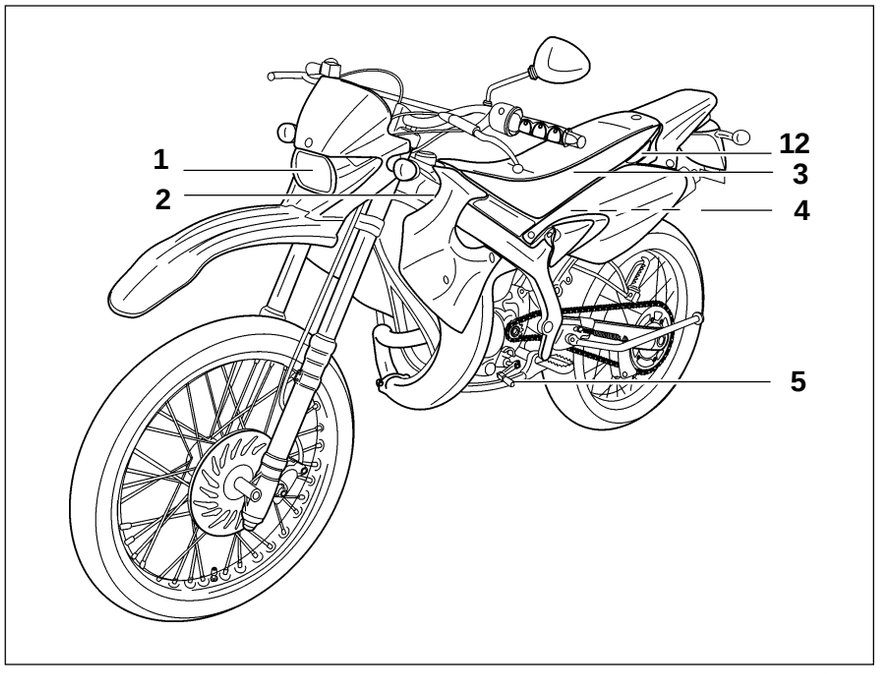
The anti-tampering label (A - F.2i) is located under the seat. It bears all the vehicle registration data envisaged by the 97/24/CE Directive.
If you intend to replace the compartment under the seat, make sure it is provided with the anti-tampering label.
When ordering spare parts, also quote the vehicle registration data.

This label identifies the type of flywheel installed on the engine (V - F.2i); this piece of information will be needed to correctly set the functions of the digital instrument board, should this be necessary.

This label must be neither removed nor changed.

MAIN COMPONENTS (Left hand side)

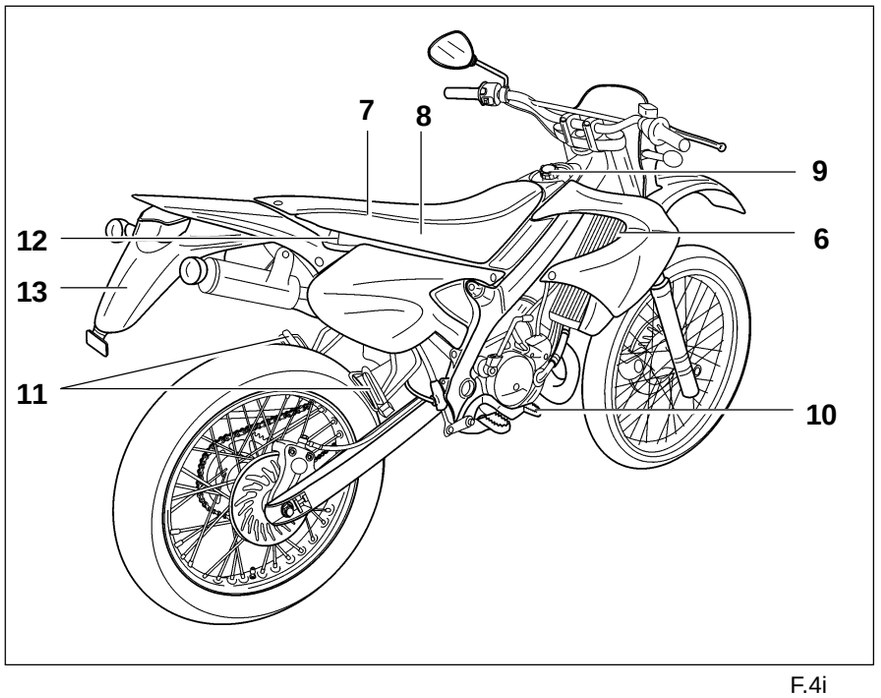
1. Headlight
2. Oil tank
3. Battery
4. Air filter
5. Shift pedal



F.3i

MAIN COMPONENTS (Right hand side)

6. Radiator
7. Owner's tool bag
8. Fuse
9. Fuel tank cap
10. Rear brake pedal
11. Passenger foot rests
12. Passenger holder
13. Number plate light + number plate holder *(SWITZERLAND only)*

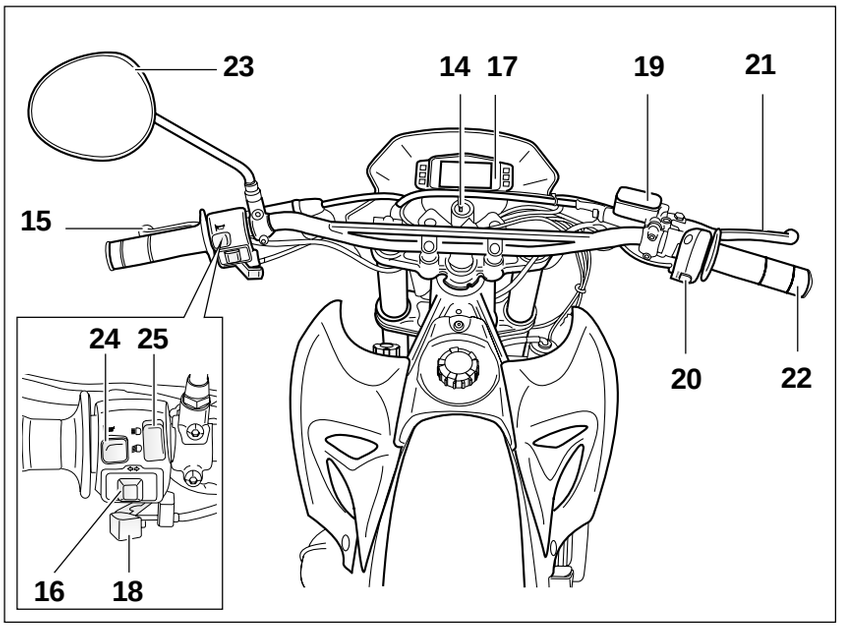


F.4i

CONTROLS

Controls/Instruments

14. Main switch
15. Clutch lever
16. Turn signal switch
17. Digital, multifunction instrument board
18. Manual starter lever
19. Front brake pump
20. Mode switch
21. Front brake lever
22. Throttle grip
23. Rear-view mirror (*)
24. Horn switch
25. Low beam/high beam light switch (**)



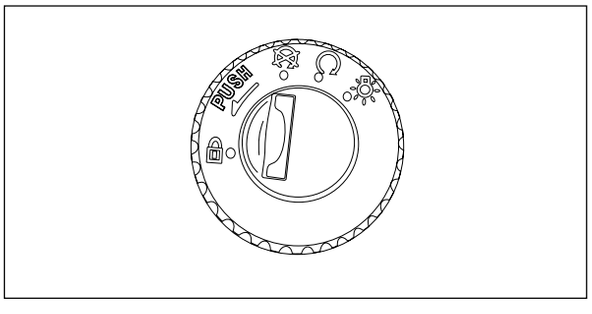
F.5i

(*) GREAT BRITAIN version: the rear view mirror is on the right hand side of the handlebar.
SWITZERLAND version: there are two rear view mirrors, one on the right and one on the left hand side of the handlebar.

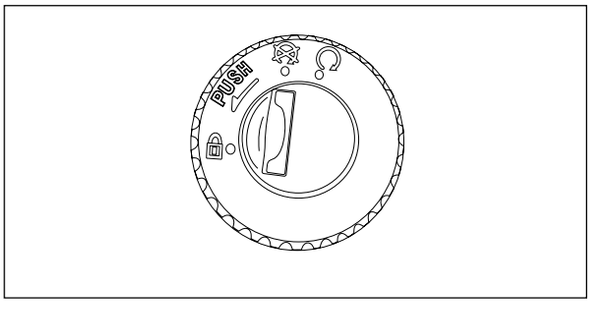
(**) SWITZERLAND version only.

START SWITCH/KEYS

- The main switch controls the ignition circuit and steering lock.



F.6i



Up to chassis n° 7086713:

: all electrical contacts are **disconnected**.

: the contacts are **activated**; the engine can start.

: **lights** are on

: **the steering lock** is on.

From chassis n° 7086714:

: all electrical contacts are **disconnected**.

: the contacts are **activated**; the engine can start and the lights come on.

: **the steering lock** is on.

KEYS

The vehicle is supplied with two keys featuring a code number, which have the following functions:

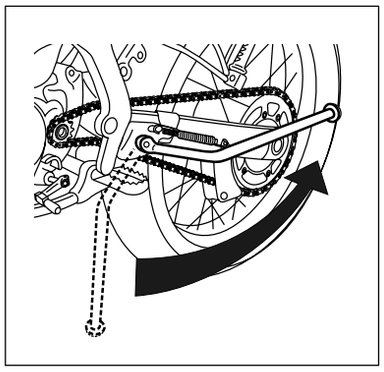
- Providing the ignition contact
- Turning the lights on
- Locking the steering system.

STEERING LOCK

Locking: turn the handlebar all the way to the right or left, push the key in and turn it counter-clockwise.
Disengaging: turn the key clockwise.

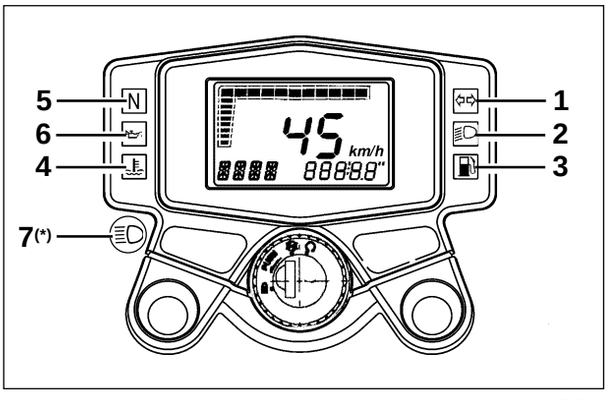
SIDE STAND

Make sure the sidestand is correctly fitted and that it moves correctly; check the spring holding the sidestand in place on a regular basis.



F.7i

DISPLAY



F.8i

1- Turn indicator light
This light blinks when the turn indicator is pushed towards left or towards right.

2- Low beam indicator light
This light comes on when the low beam of the headlight is switched on.

3- Fuel level warning light
This light comes on when the fuel level is low (reserve).
Fill the fuel tank.

4- Coolant temperature warning light
This light comes on when the temperature of the coolant is too high.
When this light comes on, stop the engine at once.

5- Neutral indicator light "N"
This light comes on when the transmission is in neutral position.

6- Oil level warning light
This warning light comes on when the oil level is low.

7 (*) - Low beam indicator light
SWITZERLAND version only.
This indicator comes on when the low beam headlight is operated.

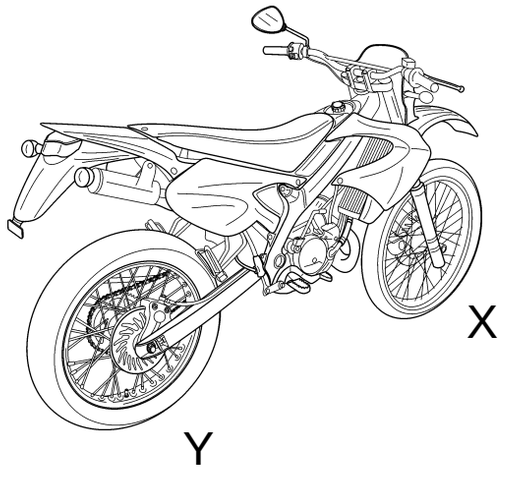
TIRES

Dimensions: 80/90 - 21 48P (enduro, front)
110/80 - 18 58P (enduro, rear)

100/80 - 17 52S (supermotard, front)
130/70 - 17 62S (supermotard, rear)

TIRE PRESSURE CHECK

Tire pressure must be checked when the tires are cold.



ENDURO:

bar (psi)		
X	2.0 (29,0)	2,2 (31.9)
Y	2.0 (29,0)	2,2 (31.9)

SUPERMOTARD:

bar (psi)		
X	2.0 (29,0)	2,2 (31.9)
Y	2.0 (29,0)	2,2 (31.9)

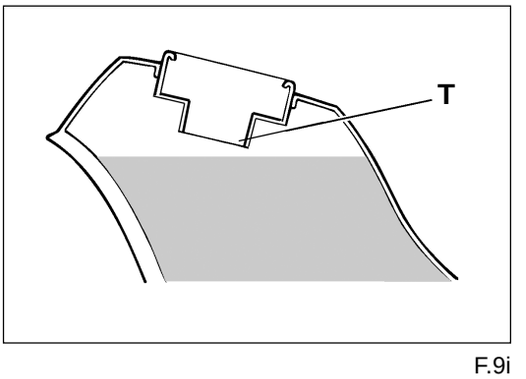
FUEL TANK

The tap of the fuel tank is of the pressure type; it therefore calls for no manual intervention.

Unscrew the cap and fill the tank. Do not overfill the fuel tank (T - F.9i); Immediately wipe off spilled fuel.

Use regular unleaded petrol with an octane of RESEARCH 95.

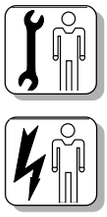
Fuel tank capacity:
Total: 6.5 L
Reserve amount: 1.8 L



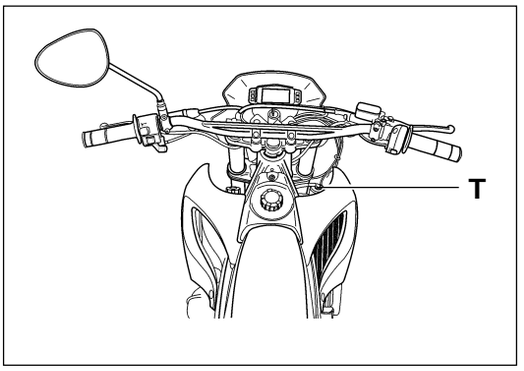
F.9i

COOLANT

CHECK



1. Remove the cap (T - F.10i) when the engine is cold and exhaust any residual pressure.
2. The coolant level must be checked on a cold engine since the level varies with engine temperature. The coolant should be between the minimum and maximum level marks.
3. If the level is low, add coolant.
4. Refit the cap.

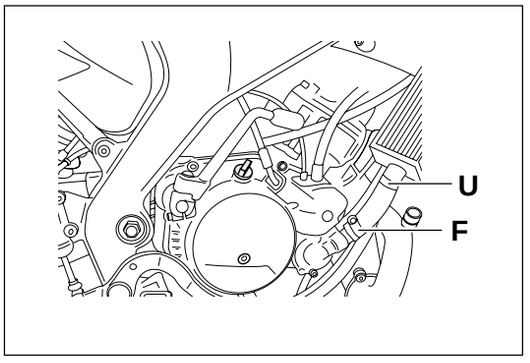


F.10i

REPLACEMENT

Changing the coolant
1. Park the vehicle on a level surface and put a pan under the radiator.
2. Remove the clamp (F - F.11i).
3. Detach the pipe (U - F.11i).

If you need too much coolant to reach the recommended level or if you need to top up too frequently, check the entire cooling system.

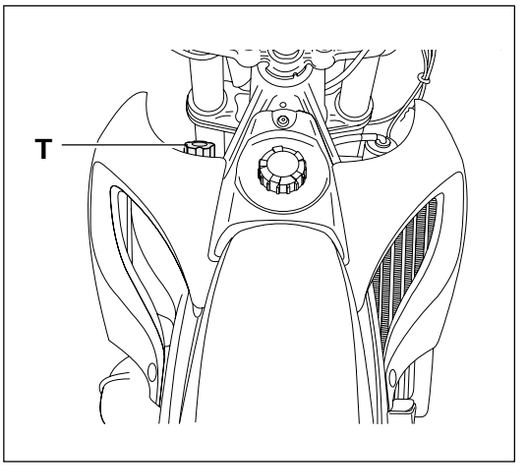


F.11i

ENGINE OIL

There is an electrical contact inside the tank that turns the red reserve light of the instrument board on when the tank is running out of lubricant.
To add oil, remove the cap (T - F.12i) and carefully pour the oil inside.

Recommended oil: SYNTHETIC 2-STROKE ENGINE OIL
JASO FC or ISO-LEGA



F.12i

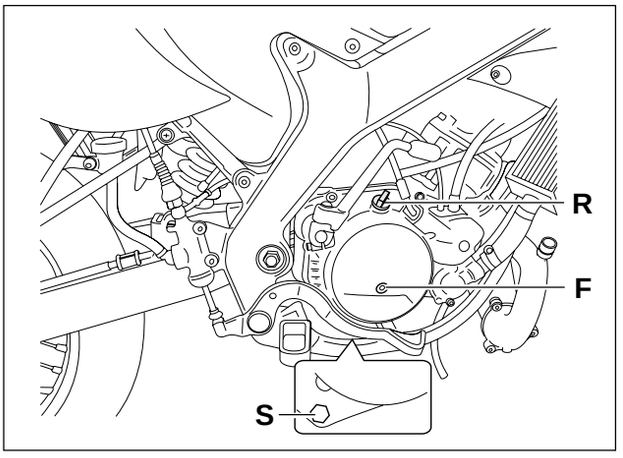
TRANSMISSION OIL

Replacement

Park the vehicle on flat ground.
2.Start the engine and warm it up for several minutes.
3.Stop the engine. Place an oil pan under the engine and remove the filler cap (R - F.13i).
4.Remove the drain screw (S - F.13i) and the screw (F - F.13i) to drain oil.
5.Reinstall the drain screw (S - F.13i) and tighten it.
6.Fill the engine with oil until this is dripping from the level control hole (F - F.13i). Fit the screw back into the hole (F - F.13i), install the oil filler cap (R - F.13i) and tighten it.

The use of SAE 10W 30 oil is recommended.

Start the engine and let it warm up for a few minutes. While it is warming up, check for oil leakage. If oil is leaking, immediately turn off the engine and locate the cause.

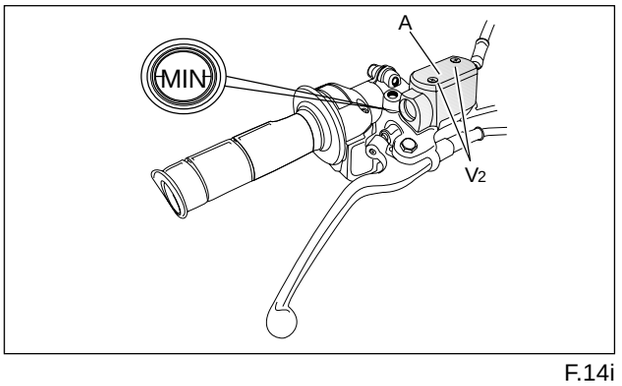


F.13i

BRAKE FLUID

CHECK

When checking the fluid level, make sure that the top end of the main cylinder is horizontal when the handlebar is turned.
Make sure the brake fluid level of the rear brake reservoir is above the minimum level mark. As far as the front brake is concerned, the level of fluid can be checked through the sight glass on the pump.

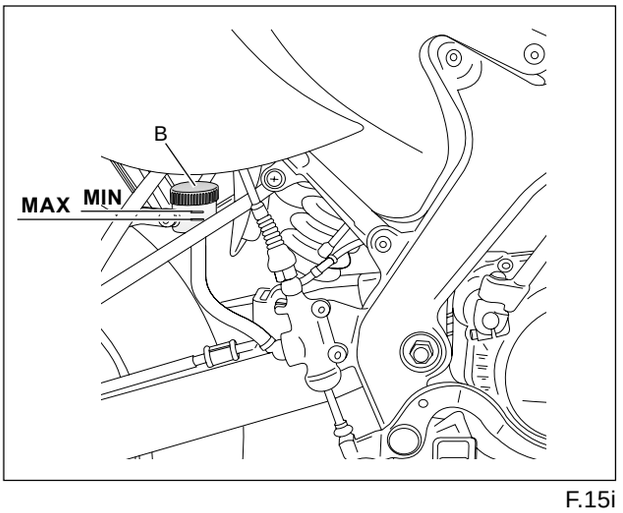


F.14i

REPLACEMENT

Front brake: remove the cap (A - F.14i) after loosening the screws (V2 - F.14i).
Rear brake: remove the cap (B - F.15i).

Brake fluid quality must comply with the specified standards; brake fluid may deteriorate rubber gaskets, causing leaks and impairing brake operation.
Recommended brake fluid: DOT 4



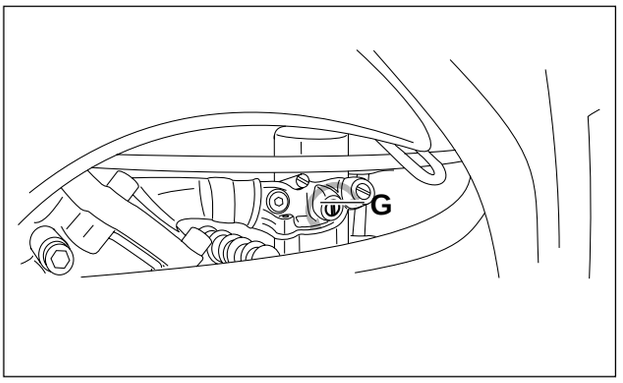
F.15i

ADJUSTMENT OF ENGINE IDLING SPEED

Start the engine and warm it up for several minutes at about 1000-2000 RPM, while occasionally revving it to 4000-5000 RPM. The engine is warm when it quickly responds to the throttle.

To adjust engine idling speed, turn the throttle stop screw (G - F.16i). Turn the screw clockwise to increase idling speed or counter-clockwise to decrease it.

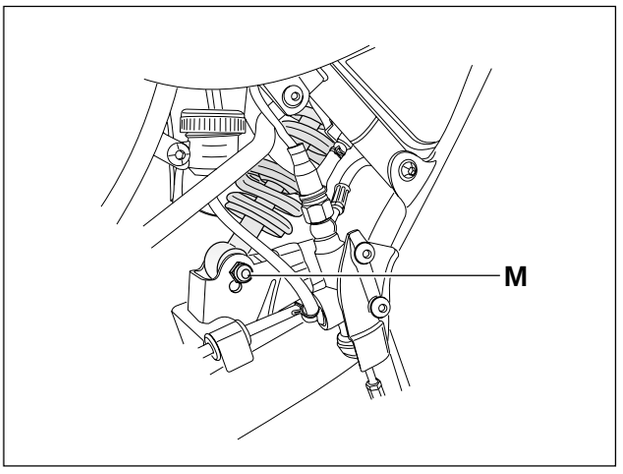
Check engine idling speed with an electronic revolution counter connected to the spark plug cable.



F.16i

SHOCK ABSORBER ADJUSTMENT

The vehicle's seat can be lowered by moving the lower fixing element (M - F.17i), double hole in the bottom fixing bracket).



F.17i

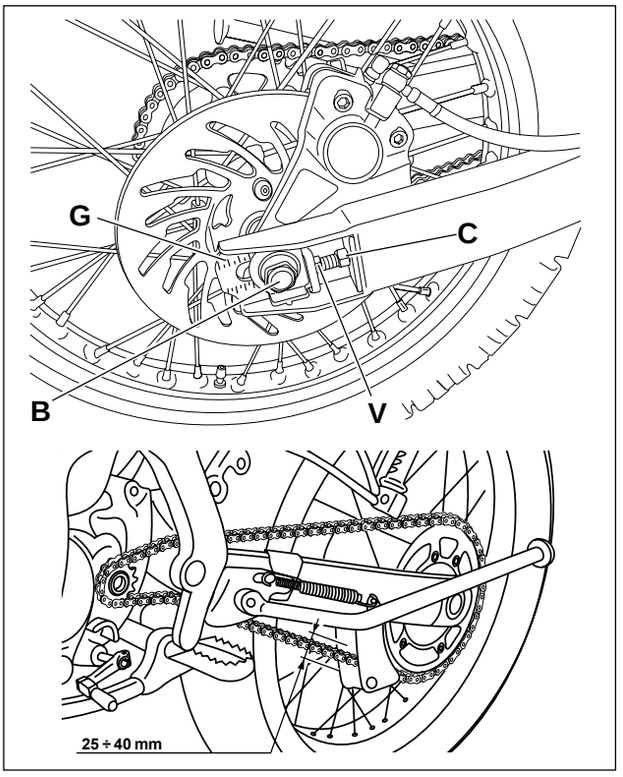
ADJUSTING TRANSMISSION CHAIN TIGHTNESS

To adjust chain tightness, loosen the wheel fixing nut (B - F.18i) and the lock nut (V - F.18i) and turn the adjustment screw (C - F.18i). After adjusting, tighten the lock nut (V - F.18i) and nut (B - F.18i).

This operation must be performed on both sides of the rear fork; adjustment must be identical on both sides; to obtain this condition, refer to the scale (G - F.18i) **located on the fork.**

An excessively taut chain will put the engine and drive components under excessive strain; maintain chain tightness within the specified limits (F.18i).

Whilst carrying out these adjustments, hold the vehicle firmly in place, otherwise it will fall over.

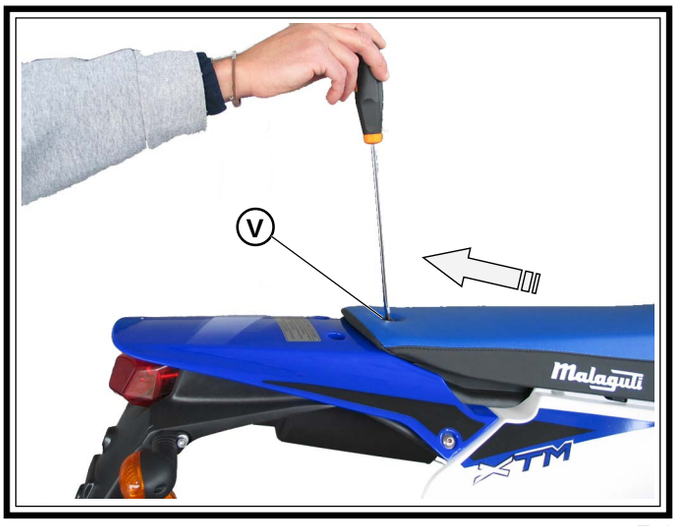


F.18i

ENGLISH

SEAT

Loosen the screw (V - F.1) and release the seat from the chassis. Pull it out rearwards.



F. 1

REAR SIDE CASINGS (rh / lh)

- (Remove seat)

Loosen the screws (V4 - F.2) and remove the rear side casing (left or right).

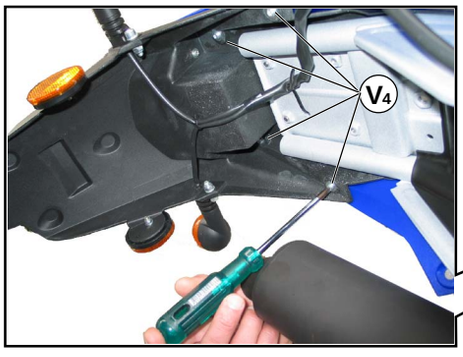
F. 2

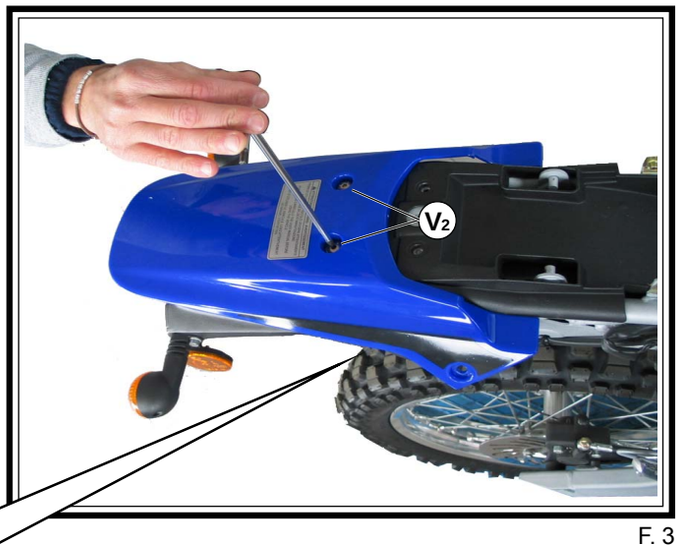
TAIL SECTION

- (Remove seat and left/right rear side casing)

Undo fixing screws (V2 - F.3) and the screws (V4 - F.3b).

F. 3b



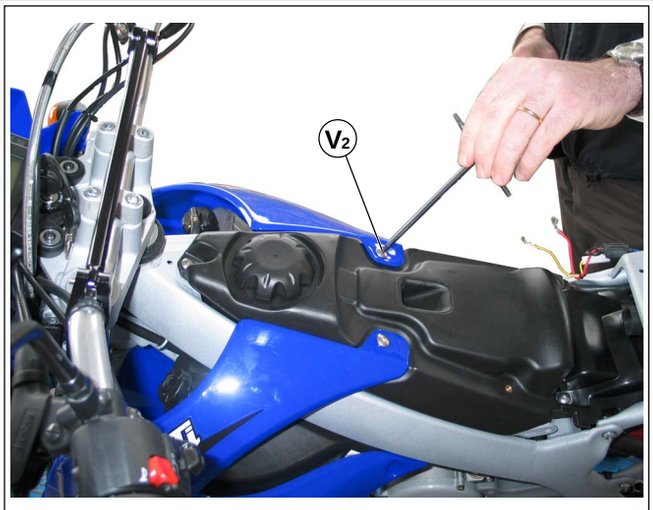


F. 3

CONVEYOR (right and left)

- (Remove seat)

Undo the screws (V2 - F.4), the side screws (V - F.5) and the front screws (V2 - F.6).



F.4

F.5

F.6

SILENCER

- (Remove seat and left hand side casing)

Remove the spring (D - F.9).
Undo the screws (V2 - F.7) and remove the silencer by pulling it rearwards.

CAUTION!!!
Before removing, make sure the silencer has cooled down.

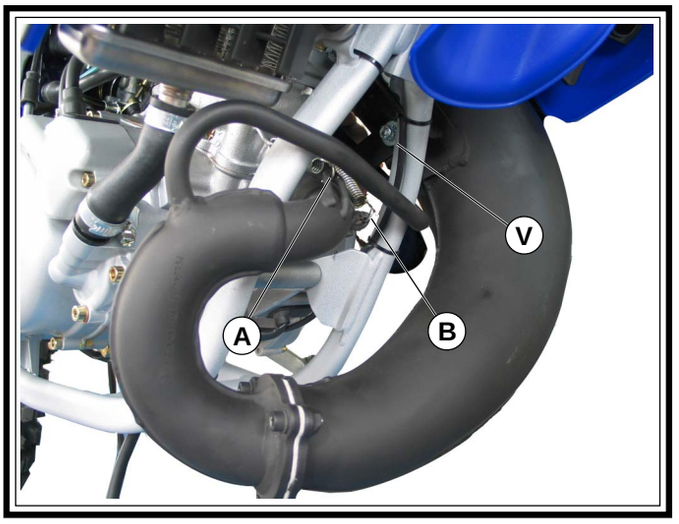
F. 7

MUFFLER

- (Remove seat and left hand side casing)

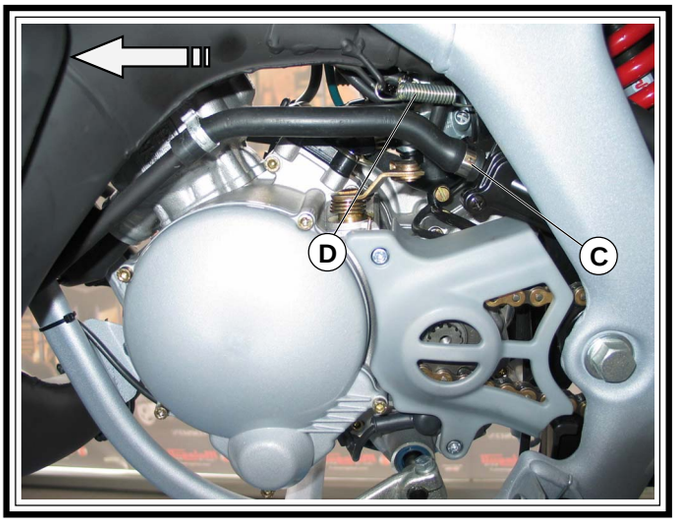
Remove the springs (A and B - F.8), fastened to the cylinder.
Undo the screw (V - F.8).

CAUTION!!!
Before removing, make sure the muffler has cooled down.



F. 8

Remove the clamp (C - F.9) from the tube of the secondary air valve and detach the tube from its fitting.
Remove the spring (D - F.9) and remove the muffler by pulling it frontwards.

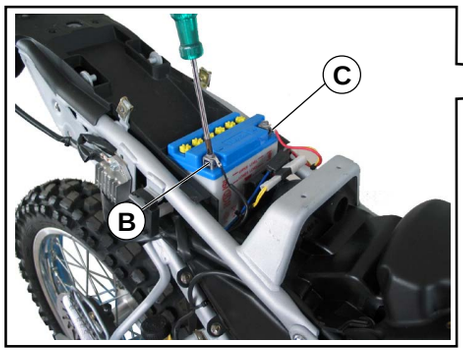


F. 9

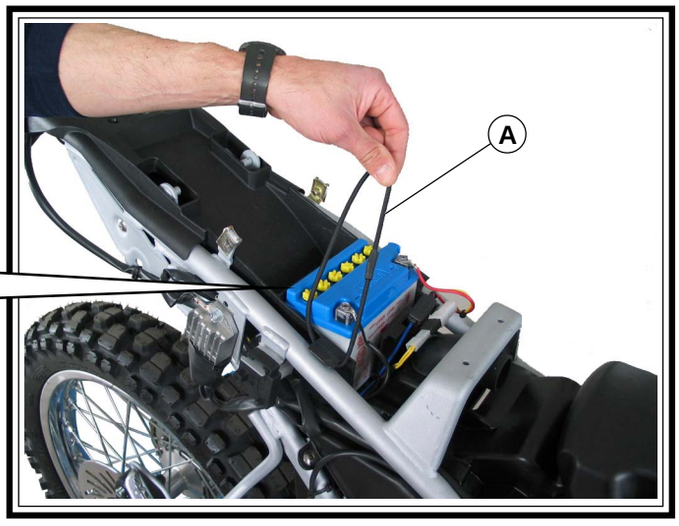
BATTERY

- (Remove seat)

Remove the elastic band (A - F.10) and detach the battery cables (B and C - F.10b).



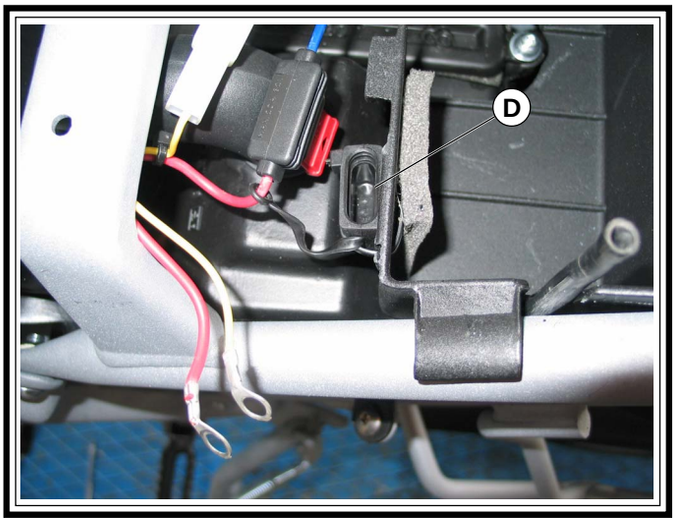
F.10b



F.10

Release the fuse carrier (D - F.11) from the clamp.

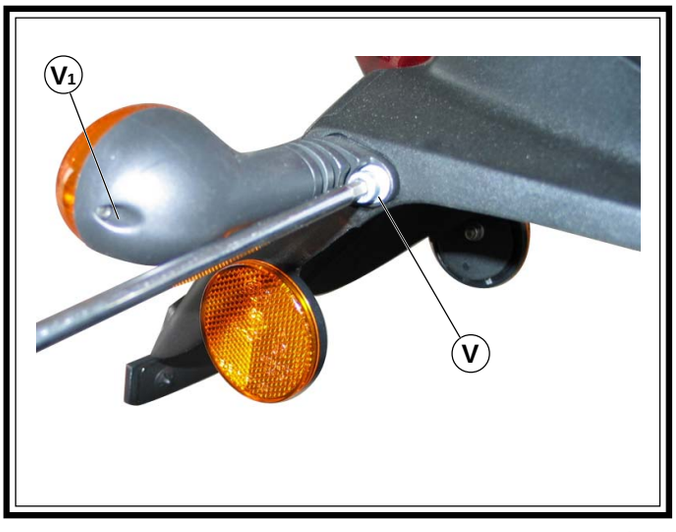
Caution!!! When refitting the battery, pay attention to the exhaust pipe.



F.11

REAR INDICATORS

Undo the screw (V - F.1).
Remove the glass cover and detach the lamp socket cables.
Undo the fixing screw (V - F. 12).



F.12

ENGLISH

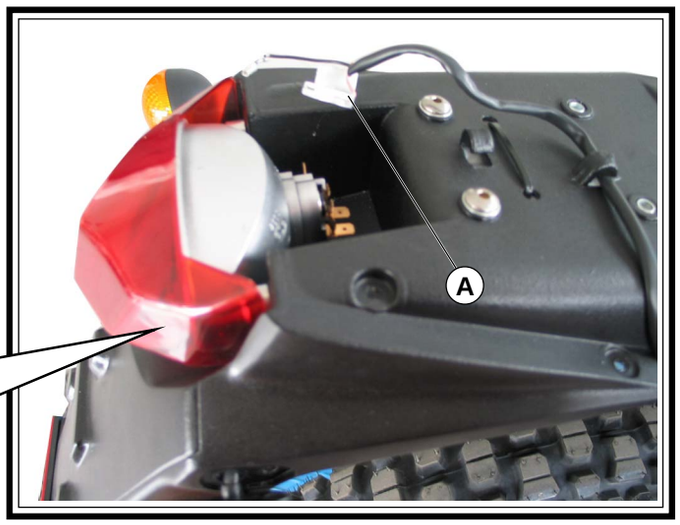
TAIL LIGHT

- (Remove seat and tail section)

Disconnect the cables (A - F.13) and undo the screws (V2 - F.13b).

Caution!!! When refitting, pay attention to the Fast-on sequence; (see wiring diagram).

F.13b



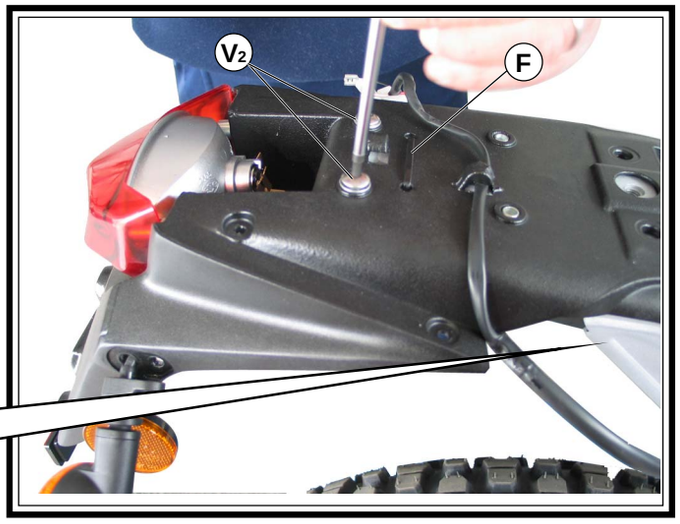
F.13

REAR WING

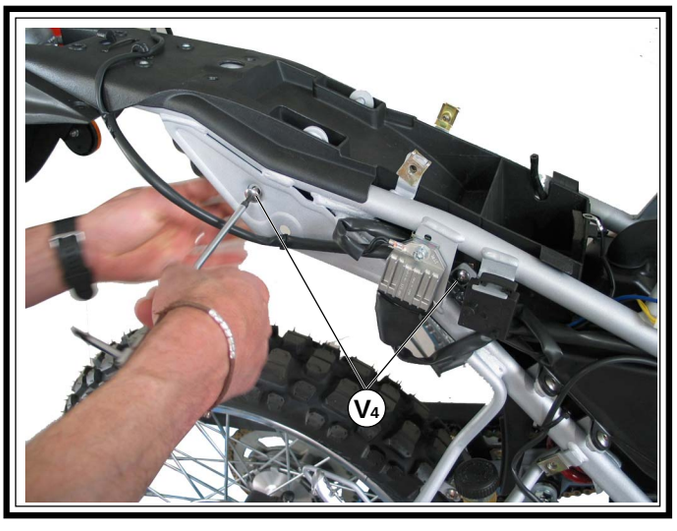
- (Remove seat, side casings and tail section)

Cut the cable clamp (F - F.14).
Undo the screws (V2 - F.14) and the screws (V4 - F.15), on both sides.
Undo the screws (V3 - F.14b).

F.14b



F.14



F.15

FILTER CARTRIDGE

- (Remove seat and battery)

Undo the screws (V2 - F.16) and remove the filter cartridge.

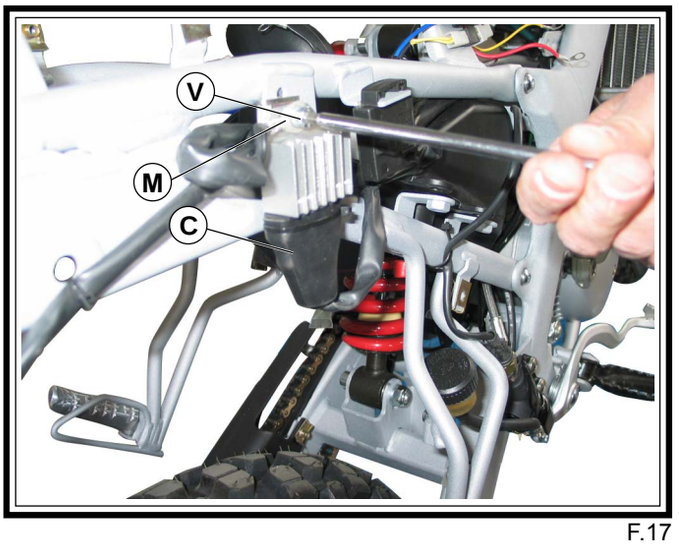
F.16

REGULATOR

- (Remove seat and rear right hand casing)

Detach the connector (C - F.17) and undo the screw (V - F.17).

Caution!!! When refitting, remember to reconnect the earth cables (M - F.17).

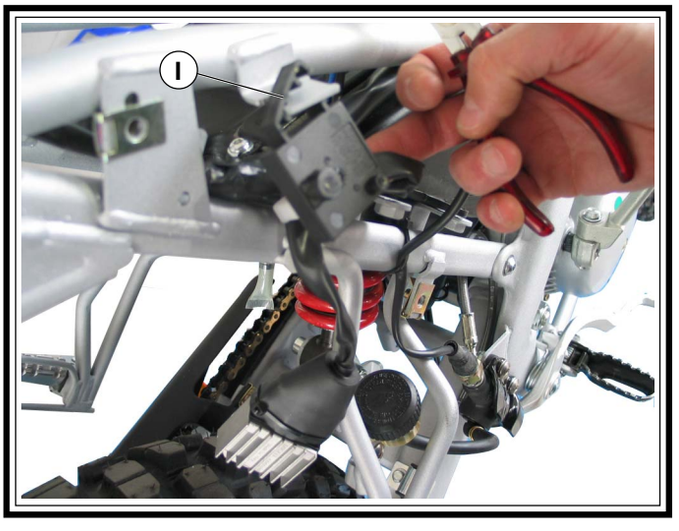


F.17

FLASHLIGHT

- (Remove seat and rear right hand casing)

Detach the connector and open the snap lock (I - F.18).

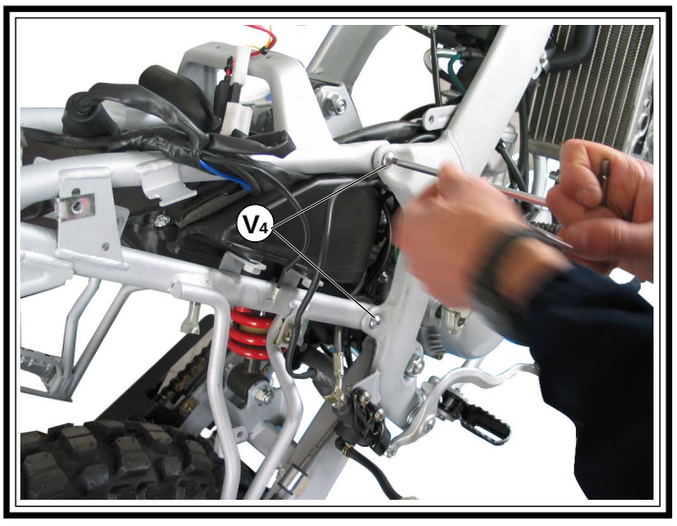


F.18

REAR CHASSIS

• (Remove seat, rear side casings, tail section, shock absorber guard, battery, rear brake fluid tank,regulator, flashlight and silencer).

Undo the screws (V4 - F.19).

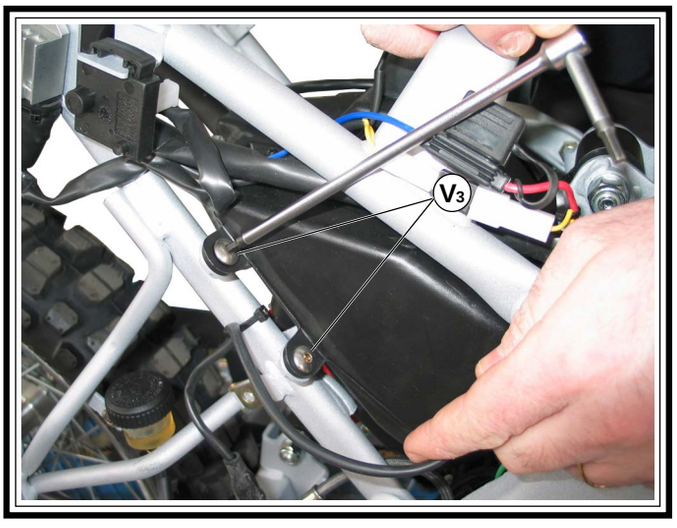


F.19

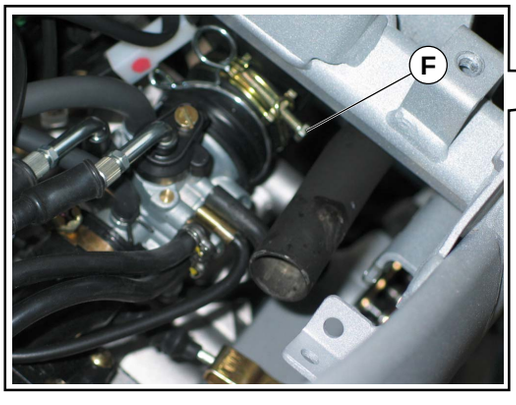
AIR FILTER SUCTION BOX

• (Remove seat, rear side casings, tail section, battery, rear wing, silencer and rear chassis).

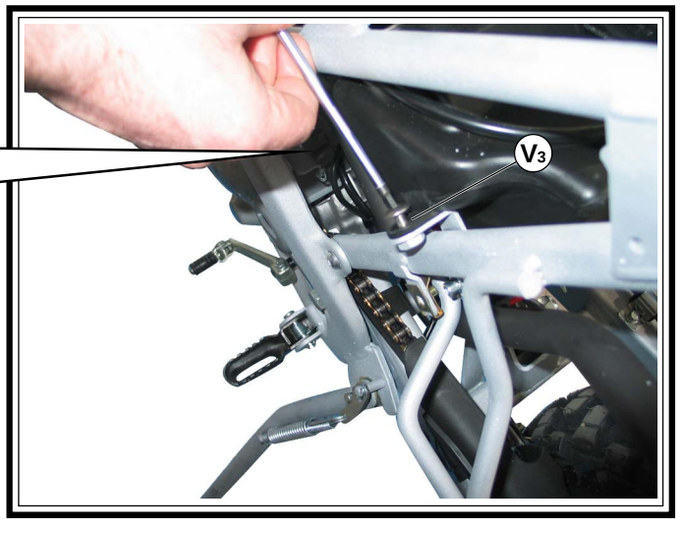
Undo the screws (V3 - F.20 - F.21) and loosen the clamp (F - F.21b).



F.20



F.21b



F.21

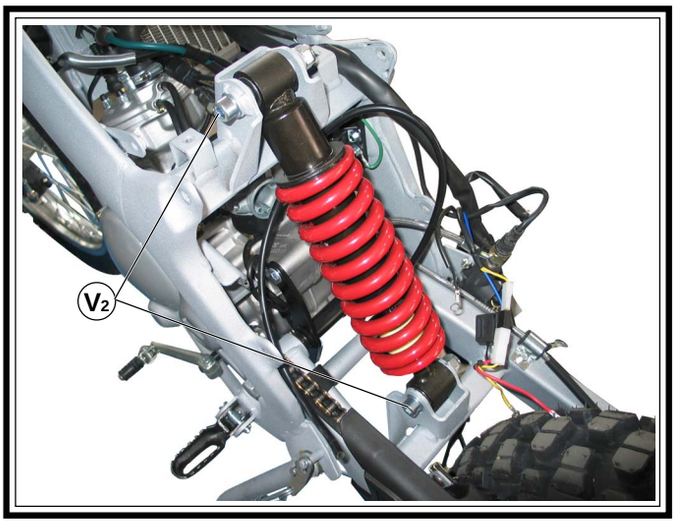
SHOCK ABSORBER

- (Remove the seat, rear left hand casing).

Undo the two screws holding the tank in place on the rear side, and remove the rubber protection.
Undo the screws (V2 - F.22) and remove the shock absorber.

CAUTION!!!
Before disassembly, hold the centre chassis section to prevent the vehicle falling over.

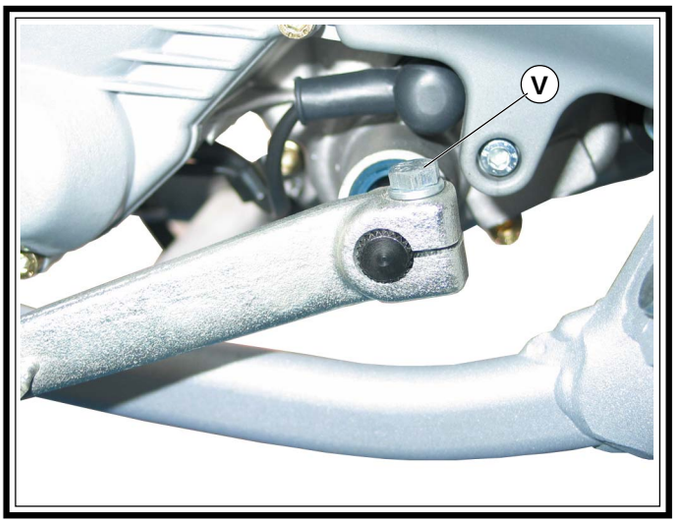
Caution!!! Check the direction in which you are fitting the shock absorber and tighten the screws (V2) to the established torque setting.



F.22

SHIFT LEVER

Undo the screw (V - F.23) and remove the lever.

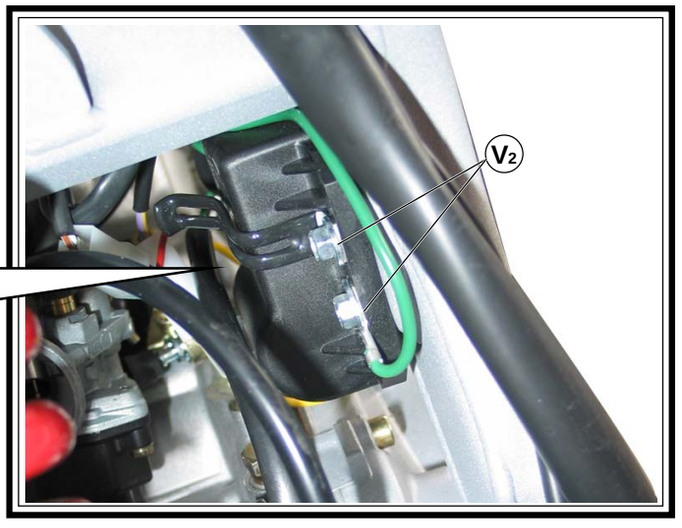


F.23

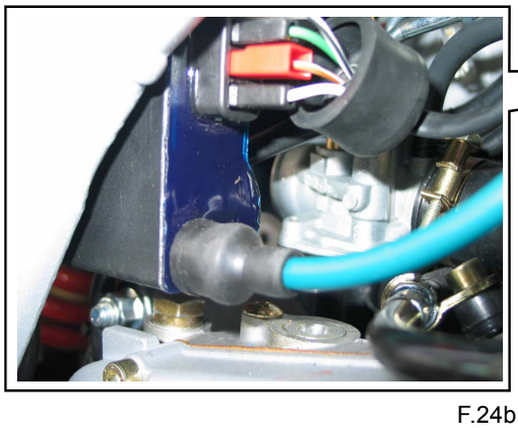
CONTROL UNIT

- (Remove seat and rear right hand casing)

Undo the self-tapping screws (V2 - F.24), detach the cables and spark plug cap and remove the control unit.



F.24



F.24b

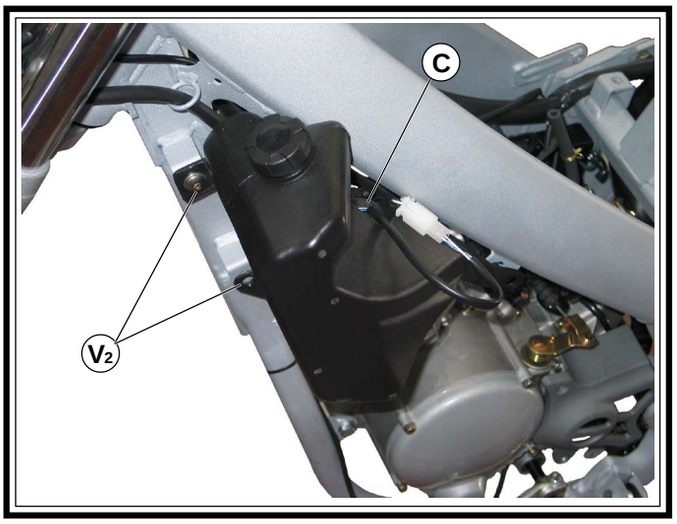
ENGLISH

OIL TANK

- (Remove seat and front left conveyor).

CAUTION!!!
Empty the tank before disassembly; to do so:
1. Put a pan under the oil tank.
2. Remove the pipe clamp (F - F.27) and detach the pipe from its fitting.

Undo the screws (V2 - F.25), detach the probe connector (C - F.25) and release the tank pin (P - F.26) from the chassis.

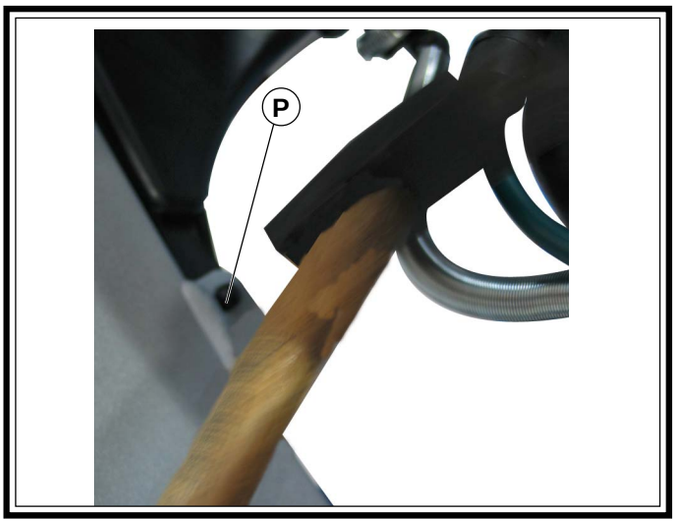


F.25

OIL LEVEL PROBE

CAUTION!!!
Before removing the probe, release the tank from the chassis.

Detach the probe's connector (C - F.25) from the main wiring.

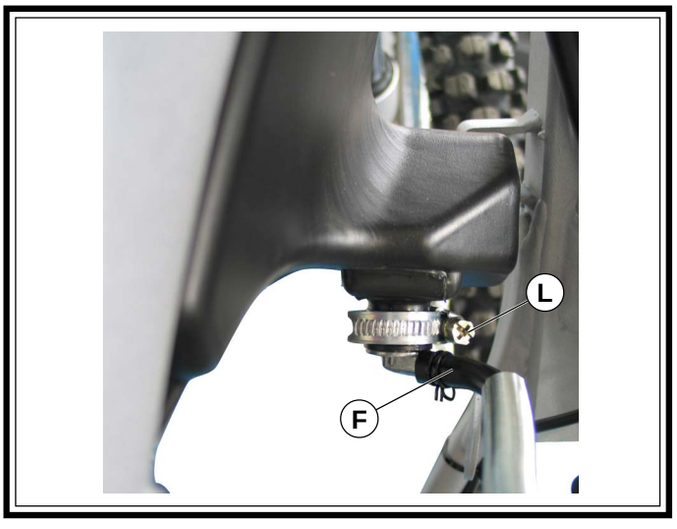


F.26

OIL PIPE FITTING WITH FILTER

Caution!!! Before removing the fitting, release the tank from the chassis.

Loosen the clamp (L - F.27) and remove the fitting, paying attention not to damage the O-ring.



F.27

FUEL TANK

• (Remove seat and top screw of the front conveyors)

Undo the front fixing screw (V - F.28) and the rear fixing screws (V2 - F.28).

Disconnect the vacuum pipe (D - F.28) and the petrol pipe (B - F.28) from the fuel cock.

Raise the tank and detach the fuel probe connector (S - F.28)

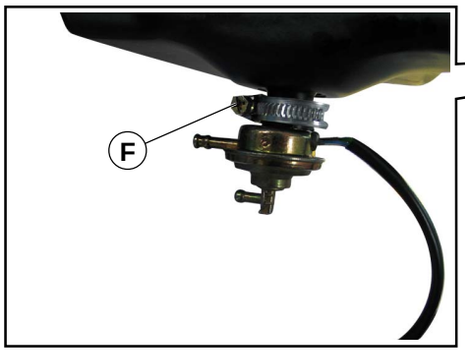
CAUTION!!!
Empty the tank.

FUEL COCK

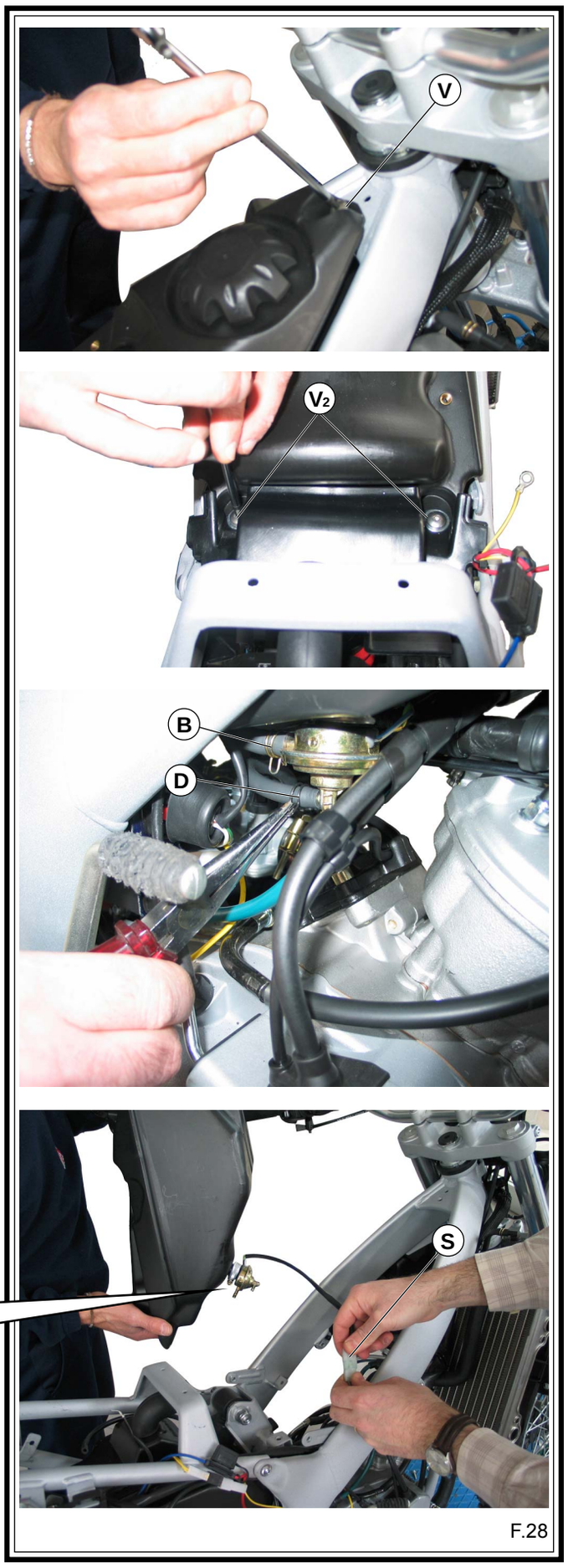
• (Remove seat and fuel tank)

CAUTION!!!
Make sure the tank is empty.

Loosen the clamp (F - F.28b) and remove the cock.



F.28b

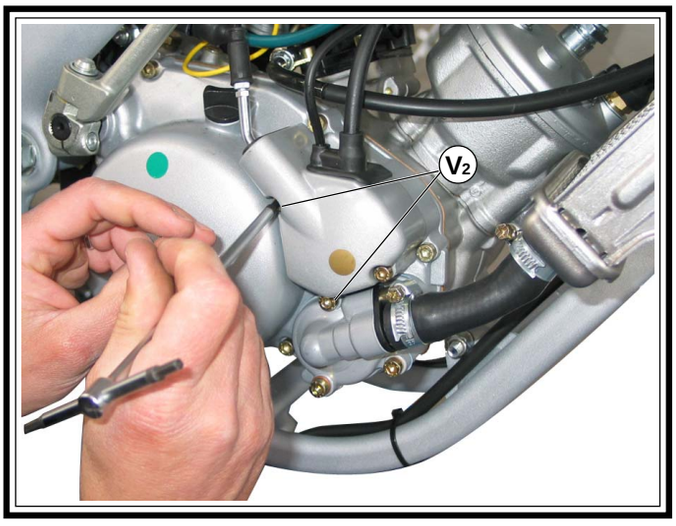


F.28

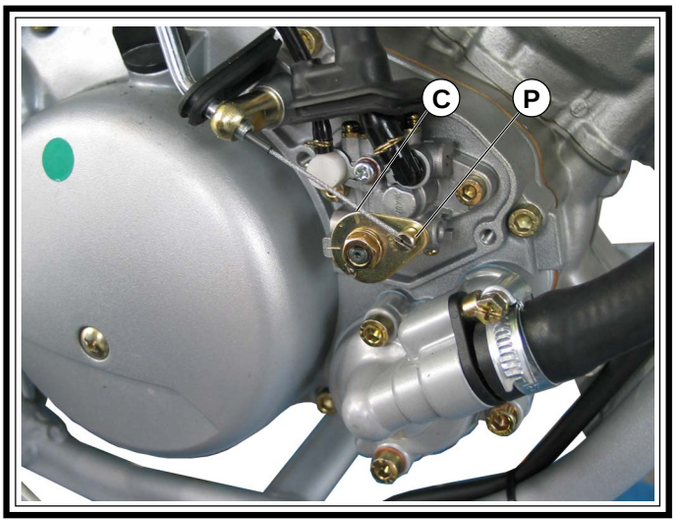
ENGLISH

THROTTLE CABLE / MIXER

Undo the screws (V2 - F.29) and remove the pump cover.
Release the cable (C - F.30) from the pump body (P - F.30).



F.29



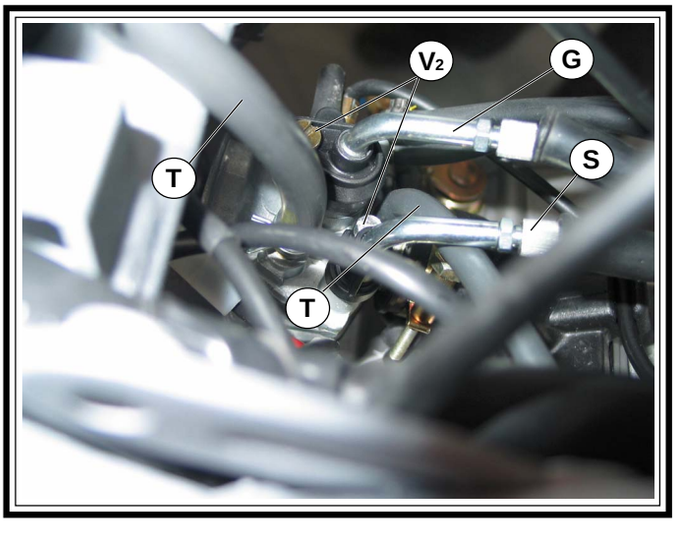
F.30

CARBURETTOR

- (Remove seat, side casings, fuel tank)

Remove the throttle cable coupler (G - F.31) and the starter coupler (S - F.31), by loosening the screws (V2 - F.31).
Remove the pipe clamps and detach the pipes (T - F.31).
Detach the carburettor from the suction manifold, after loosening the spring.

Caution!!! If you are removing the engine only, the carburettor can be left attached to the engine.



F.31

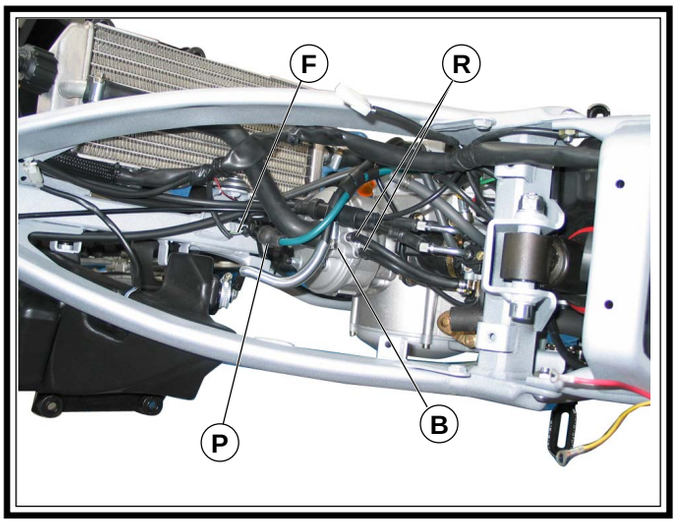
ENGINE

• (Remove seat, tank, side conveyors and muffler)

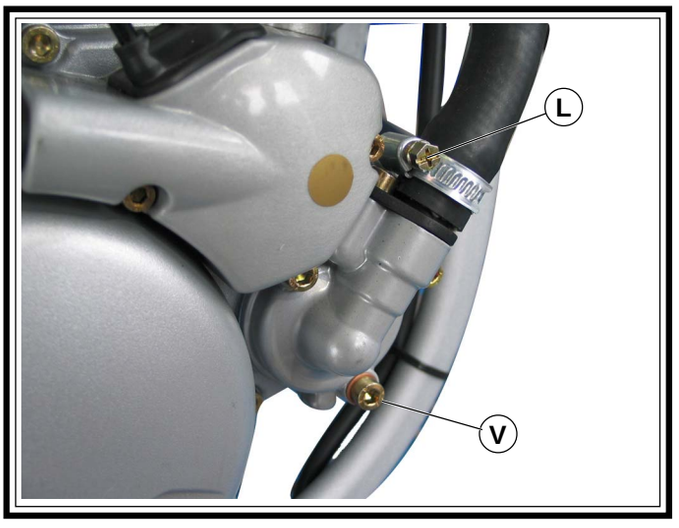
Detach the two pipes of the cylinder head heater (R - F.32), remove the suction manifold screws and detach the spark plug cap (P - F32).
Detach the white/green cable from the thermistor (F - F.32).
Detach the neutral cable (under the engine, near the shift levers) and the cables of the flywheel and control unit, releasing them from their clamps.
Remove the mixer cover and disconnect the transmission. Remove the mixer pump by loosening the two Allen screws.
Empty the coolant circuit by means of the drainage screw on the pump body (V - F.33).
Remove the head-radiator (B - F.32) and pump-radiator (L - F.33) couplings.
Remove the pinion cover.

CAUTION!!!
Before disassembly, hold the centre chassis section to prevent the vehicle falling over.

Remove the lock nut and pull out the fork pin.
Loosen the nut of the front engine pin and remove the pin.
Pull the engine out from the left hand side, by first pulling out the front section.



F.32



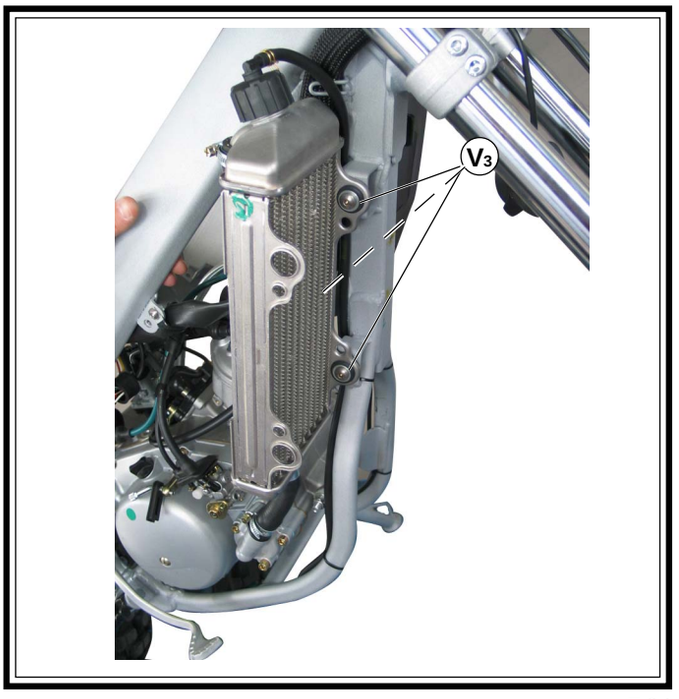
F.33

RADIATOR

• (Remove seat and right hand conveyor)

Caution!!! Before removing the radiator, drain the coolant using the drain screw on the pump cover (V - F.33)**.**

Undo the screws (V3 - F.34) and remove the radiator.



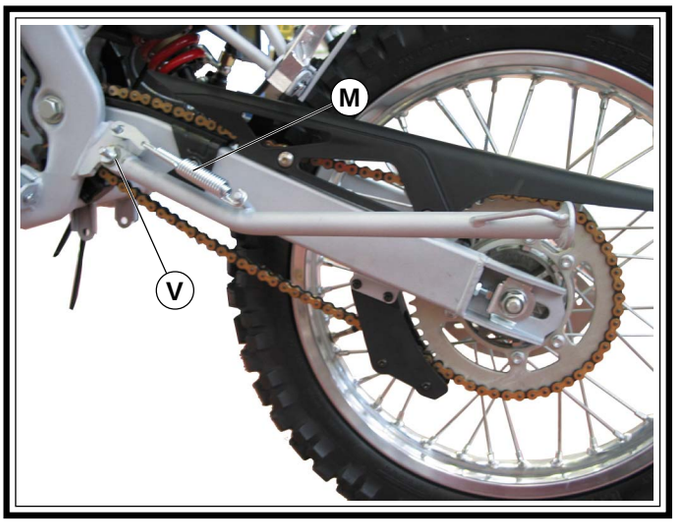
F.34

SIDE STAND

CAUTION!!!
Before disassembly, hold the centre chassis section to prevent the vehicle falling over.
This operation must be performed with the side stand in its idle position.

Release the screws (M - F.35) and undo the screw (V - F.35).

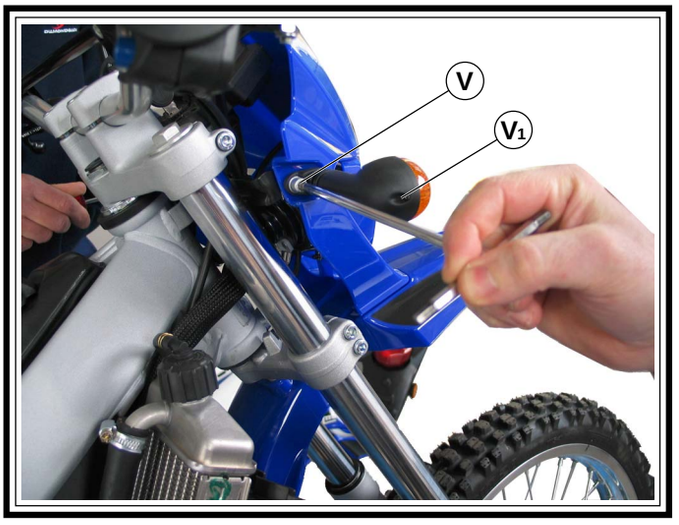
Caution!!! When reassembling, use a high strength threadlocker.



F.35

FRONT INDICATORS (right and left)

Undo the screw (V - F.1).
Remove the glass cover and detach the lamp socket cables.
Undo the fixing screw (V - F. 36).



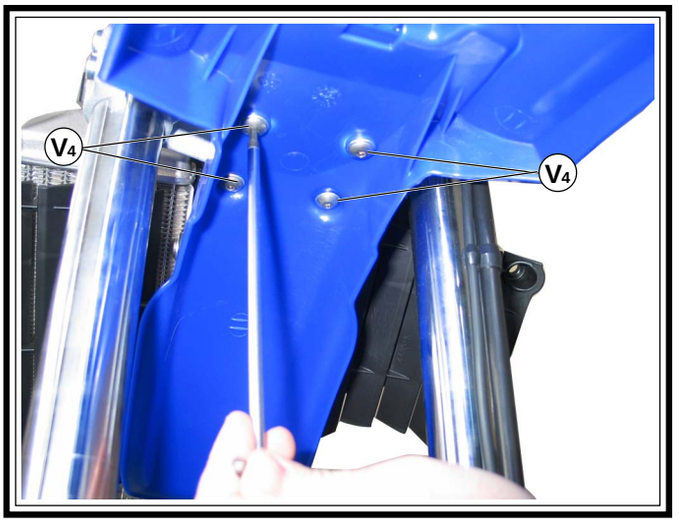
F.36

GUARD / FRONT WING

- (Remove front indicators)

Undo the screws (V4 - F.37) of the front wing.

Caution!!! Remember to retrieve the bearings in the bottom section.



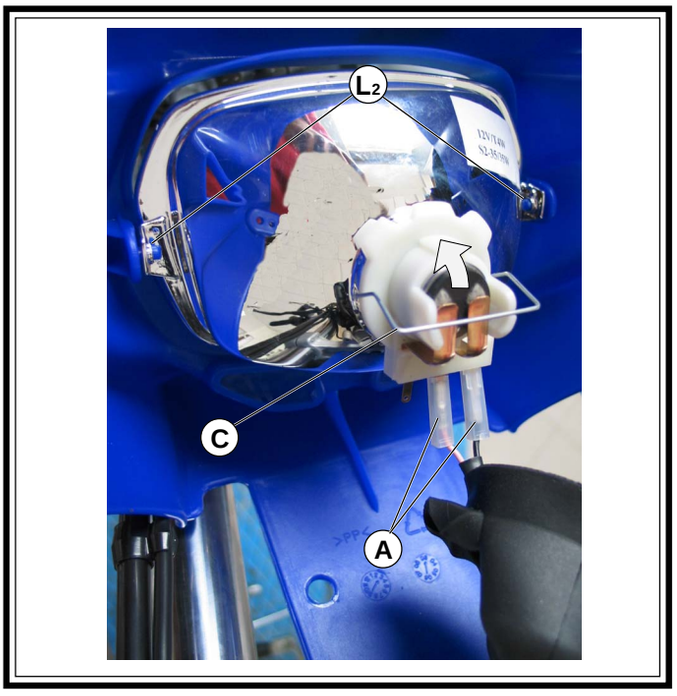
F.37

HEADLIGHT

- (Remove guard)

Remove the fast-ons of the wiring (A - F.38) and remove the headlight by folding the tabs outwards (L2 - F.38).
To access the lamp, open the clip (C - F.38).

Caution!!! When reassembling, pay attention to the fast-on assembly sequence (see wiring diagram).

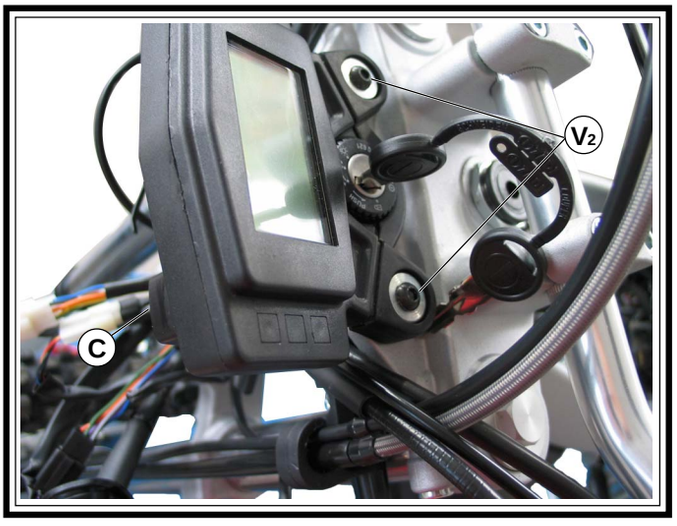


F.38

DISPLAY

- (Remove the front indicators and guard)

Detach the connector (C - F.39) and unscrew the fixing screws (V2 - F.39).



F.39

THROTTLE CONTROL

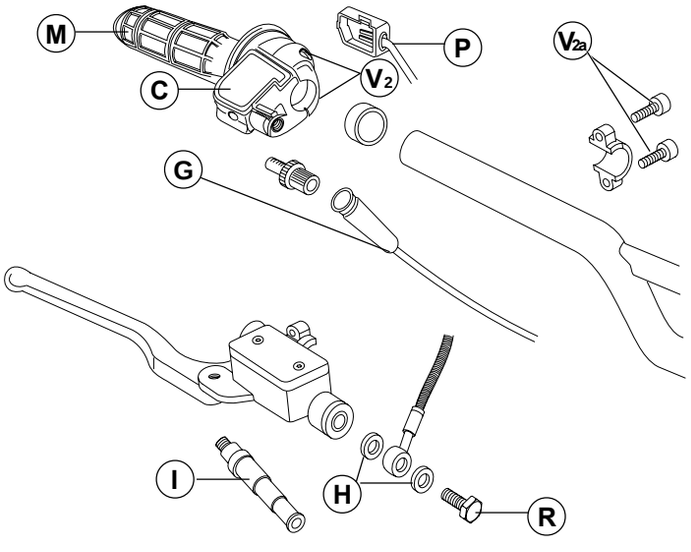
Remove the MODE button (P - F.40), by unscrewing the fixing screw.
Remove the front cover (C - F.40) and release the throttle cable (G - F.40).
Remove the knob (M - F.40).
Undo the screws (V2 - F.40) and remove the throttle control.

Caution!!! To reduce friction during knob removal and refitting, use compressed air.

FRONT BRAKE PUMP

Detach the fast-ons of the stop switch wiring (I - F.40). Undo the hydraulic transmission screw (R - F.40), paying attention to oil leaks.
Loosen the screws (V2a - F.40) and remove the pump.

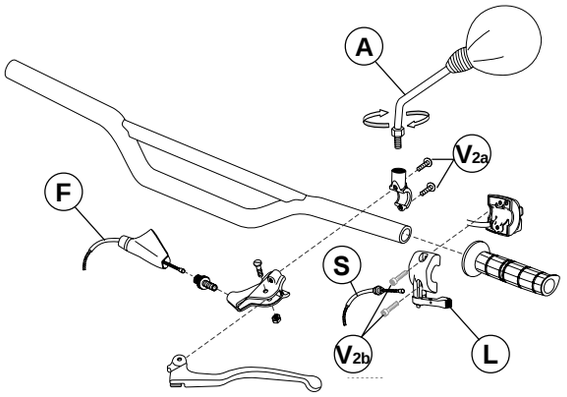
CAUTION!!!
When refitting, remember to replace the copper gaskets (H - F.40) and bleed using the relevant equipment.



F.40

CLUTCH CONTROL

Detach the clutch cable (F - F.41) and the starter cable (S - F.41) and remove the mirror (A - F.41). Loosen the screws (V2b - F.41), remove the starter lever body (L - F.41) and the left hand knob. Loosen the screws (V2a - F.41) and remove the left hand control.



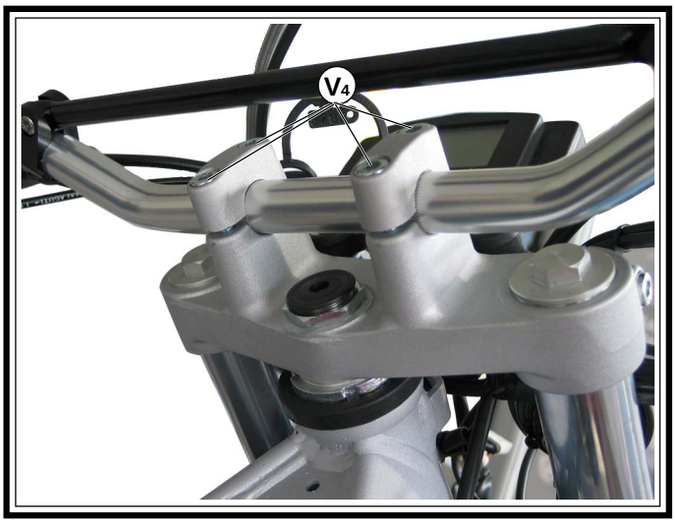
F.41

HANDLEBAR

- (Remove right and left controls)

Loosen the screws (V4 - F.42), to remove the U-bolts holding the handlebar in place.

Caution!!! When refitting, remember to tighten the front screws first.

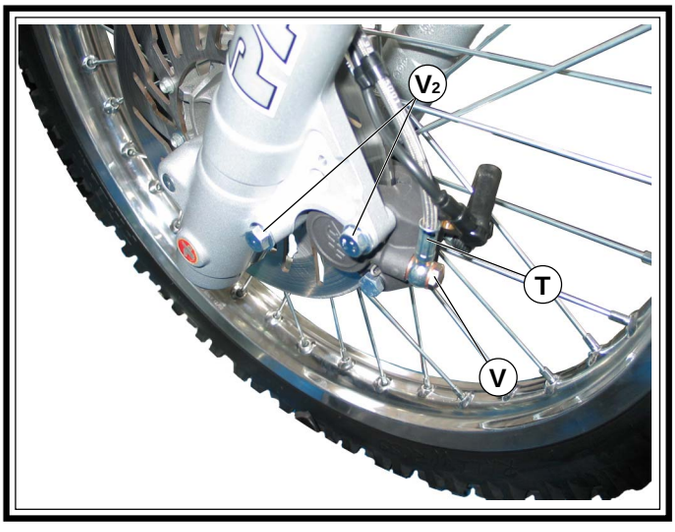


F.42

FRONT BRAKE CALIPER

Loosen the screws (V2 - F.43) and disconnect the pipe (T - F.43), after loosening the hydraulic transmission screw (V - F.43).

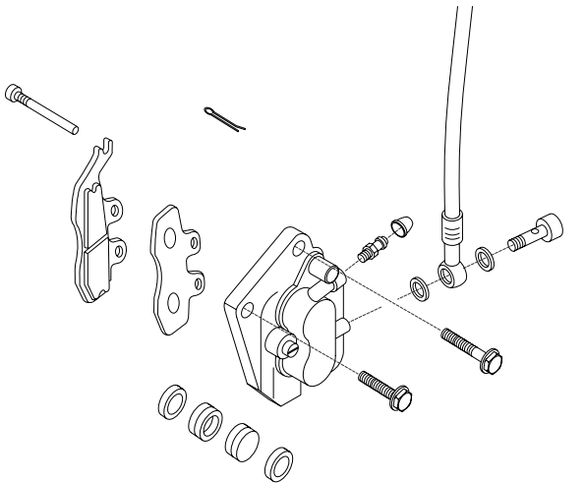
Caution!!! When refitting, remember to replace the copper gaskets and bleed using the relevant equipment.



F.43

REMOVING THE FRONT BRAKE CALIPERS

(MOTARD model).



F.43A

REMOVING THE FRONT BRAKE CALIPERS

(ENDURO model).

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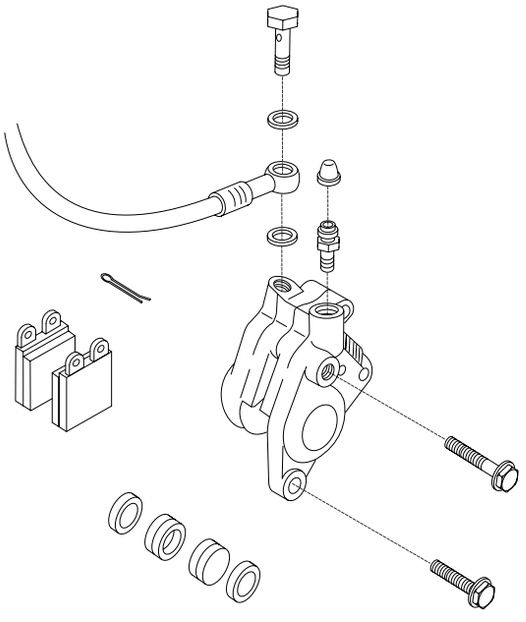
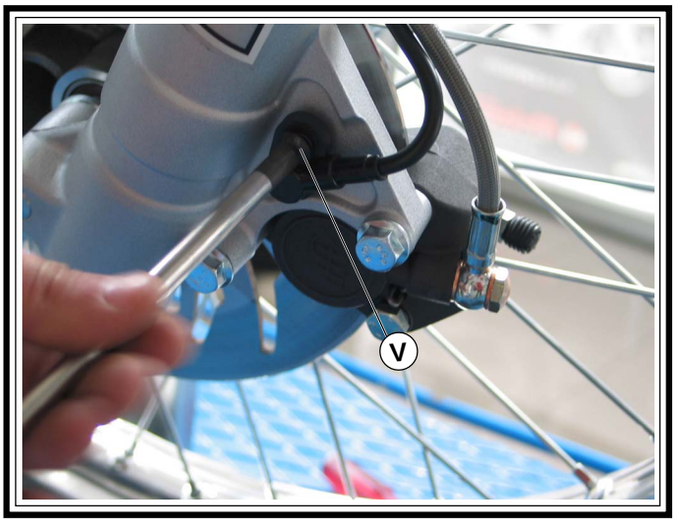


F.43B

SPEEDOMETER SENSOR

Loosen the screw (V - F.44) and remove the sensor; release the cable from the U-bolts and detach the connector under the headlight.

Caution!!! When refitting, pay attention to the shim washer between the sensor and the fork.



F.44

ENGLISH

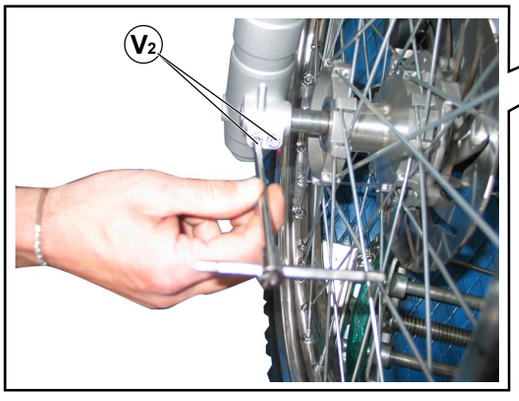
FRONT WHEEL

- (Remove front caliper and speedometer sensor)

CAUTION!!!
Before disassembly, hold the centre chassis section to prevent the vehicle falling over.

Loosen the screw (V2 - F.45b).
Unscrew the pin (P - F.45) and remove it.
Remove the front wheel.

F.45



F.45b

Caution!!! When refitting, after tightening the pin (P - F.45), remember to the tighten the screws (V2 - F.45b).

FRONT BRAKE DISC

- (Remove front wheel)

Loosen the screws (V6 - F.46)

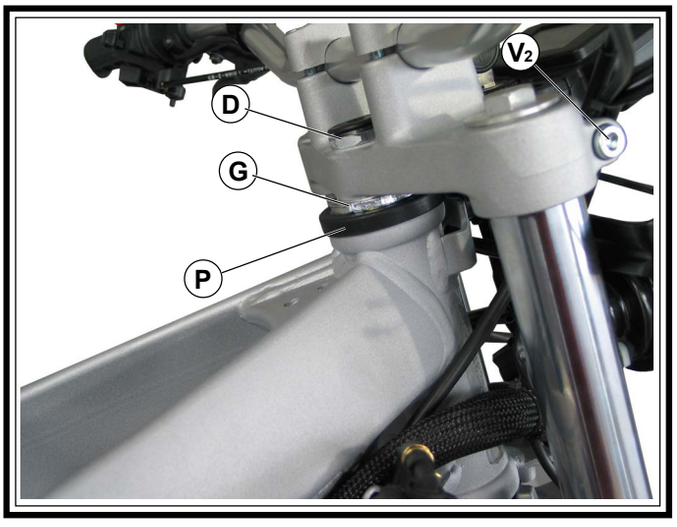
Caution!!! When refitting, use threadlocker.

F.46

FORK HEAD

• (Remove front indicators, guard, digital instrument board and handlebar)

Unscrew the Allen screws (V2 - F.47)
Unscrew the nut (D - F.47) and remove the fork head.



F.47

FORK

• (Remove front indicators, guard, digital instrument board, front wheel, speedometer sensor, front caliper, handlebar and fork head)

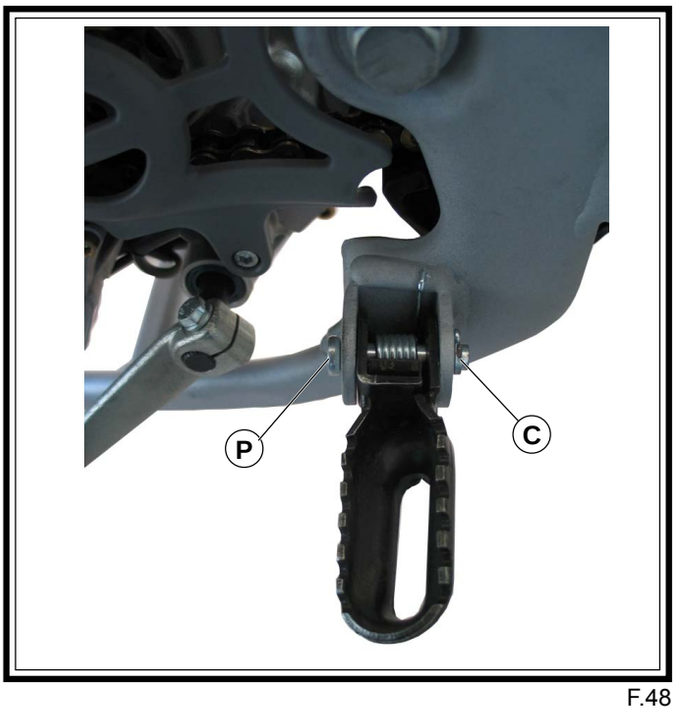
Unscrew the ring nut (G - F.47), remove the dust guard (P - F.47) and pull out the fork.

Amount of oil per stem: 350cc.

CAUTION!!!
Before disassembly, hold the centre chassis section to prevent the vehicle falling over.

FOOT RESTS (right and left)

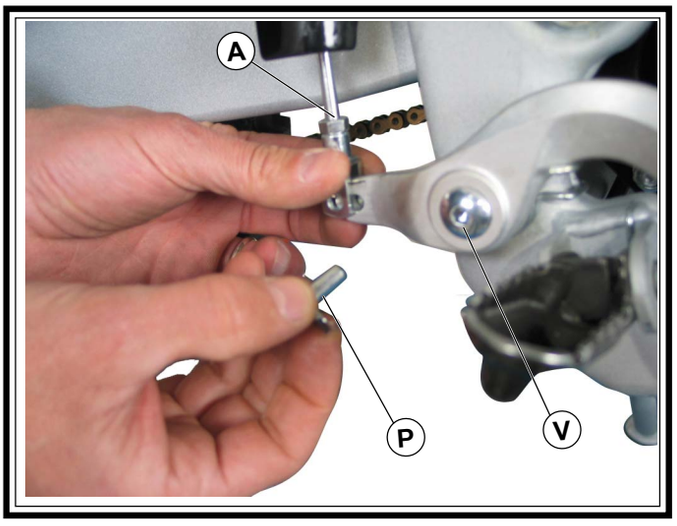
Remove the split pin (C - F.48), pull out the pin (P - F.48) and remove the spring.



F.48

REAR BRAKE LEVER

Remove the stick (A - F.49), by pulling out the pin (P - F.49); loosen the screw (V - F.49) and remove: the pedal, the spring, the bushing and the plastic washer.



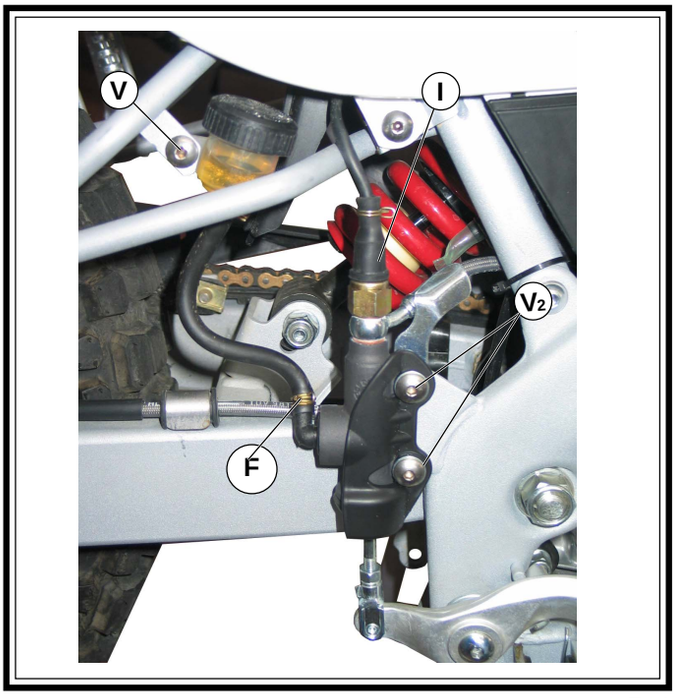
F.49

REAR BRAKE PUMP AND REAR BRAKE OIL TANK

Remove the clamp (F - F.50) and empty the contents of the oil circuit into a container. Loosen the screw (V - F.50) and remove the rear brake oil tank.

To remove the pump: disconnect the cable from the rear stop switch (I - F.50) and unscrew it. Undo the fixing screws (V2 - F50), paying attention to the eye adjustment plaque.

Caution!!! When refitting, remember to replace the copper gaskets and bleed using the relevant equipment.



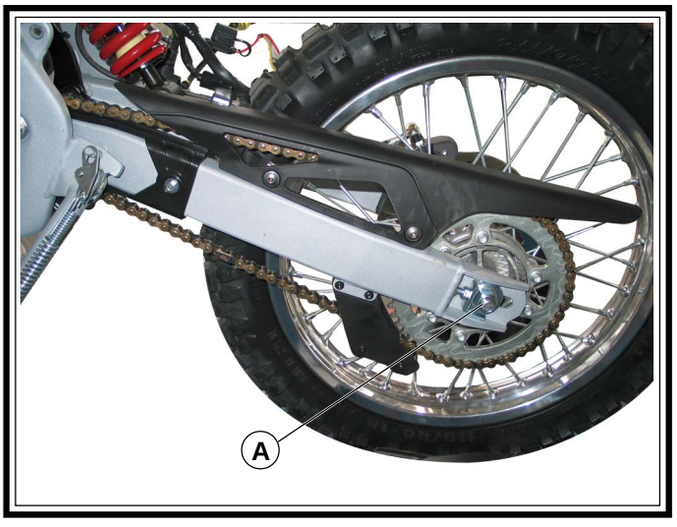
F.50

REAR WHEEL

CAUTION!!!
Before disassembly, hold the centre chassis section to prevent the vehicle falling over.

Unscrew the nut (A - F.51), loosen the chain tightening adjusters, release the chain from the gear wheel and remove the pin (P - F.52).

Caution!!! When refitting, follow the instructions provided in section 2, in "ADJUSTING TRANSMISSION CHAIN TIGHTNESS"



F.51

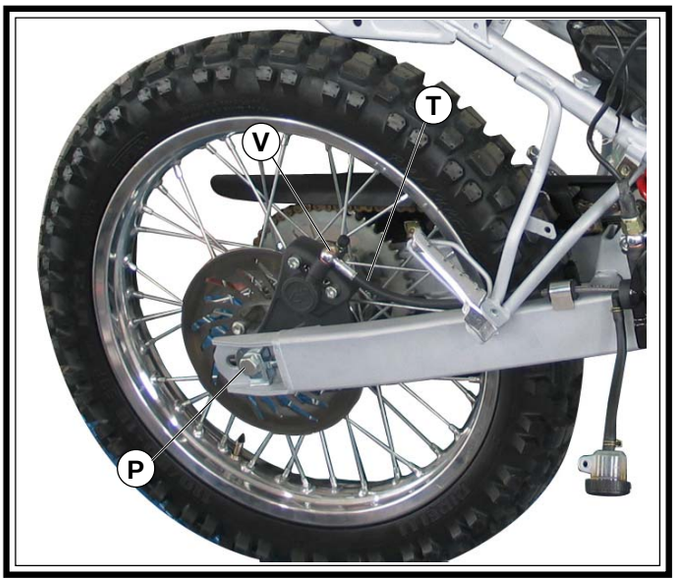
REAR BRAKE CALIPER

- (Remove rear wheel)

Loosen the hydraulic transmission screw (V - F.52) and detach the pipe (T - F.52) from the caliper. Release the calipers from the fork.

CAUTION!!!
Before disassembly, hold the centre chassis section to prevent the vehicle falling over.

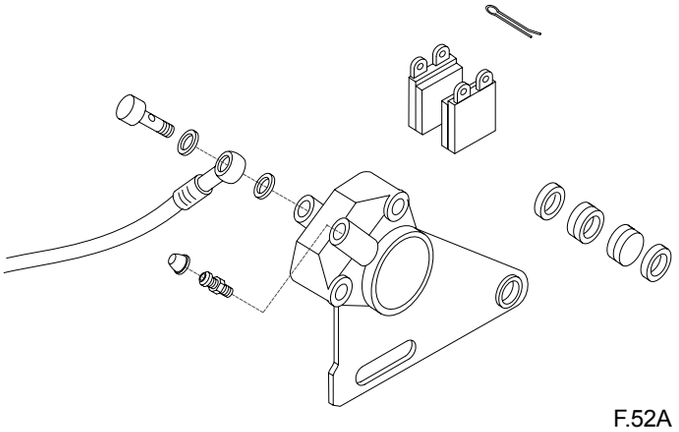
Caution!!! When refitting, remember to replace the copper gaskets and bleed using the relevant equipment.



F.52

REMOVING THE REAR BRAKE CALIPERS

(MOTARD/ENDURO model).



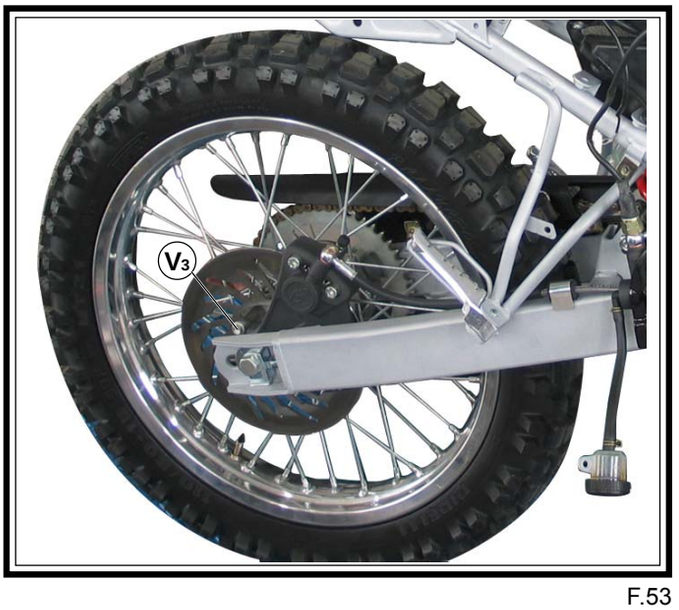
F.52A

REAR DISC BRAKE

- (Remove front wheel and rear caliper)

Undo the screws (V3 - F.53).

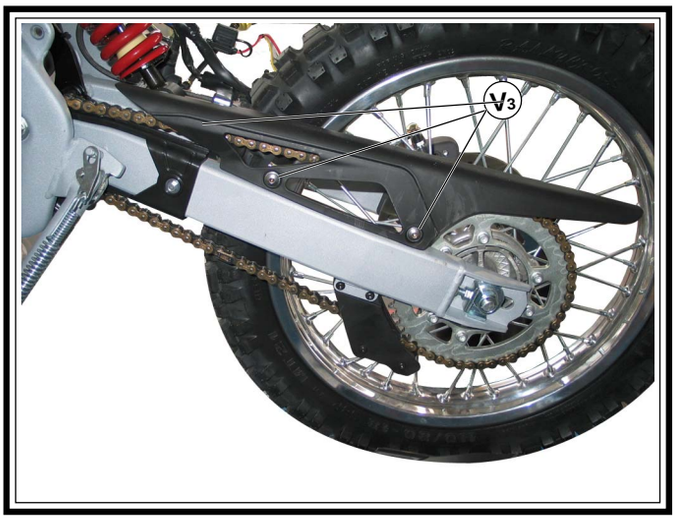
Caution!!! When refitting, use thread-locker.



F.53

CHAIN CRANKCASE

Undo the screws (V3 - F.54).



F.54

FORK

• (Remove rear wheel, rear brake caliber, shock absorber, chain crankcase)

Unscrew the nut (D - F.55) and remove the pin.

CAUTION!!!
Before disassembly, hold the centre chassis section to prevent the vehicle falling over.

Caution!!! When refitting, follow the instructions provided in section 2, in "ADJUSTING TRANSMISSION CHAIN TIGHTNESS"

F.55

CHASSIS TORQUE WRENCH SETTINGS

TORQUE WRENCH SETTINGS TABLE			
TOURQUE WRENCH SETTINGS	**N*m**	**Kg*m**	**Remarks**
Front wheel pin	38 - 52	3.8 - 5.2	
Front wheel pin fixing element	17 - 23	1.7 - 2.3	G
Front brake caliper	24 - 36	2.4 - 3.6	
Muffler side coupler	6 - 10	0.6 - 1.0	
Rear engine fixing screws	20 - 26	2.0 - 2.6	
Fork pin	51 - 69	5.1 - 6.9	G
Front engine fixing screws	20 - 26	2.0 - 2.6	
Front pump clamp	5 - 7	0.5 - 0.7	
Rear wheel	72 - 98	7.2 - 9.8	G
Clamps	2 - 4	0.2 - 0.4	
Top shock absorber	38 - 52	3.8 - 5.2	
Bottom shock absorber	38 - 52	3.8 - 5.2	
Fork head	18 - 24	1.8 - 2.4	
Handlebar U-bolt	18 - 24	1.8 - 2.4	
Steering nut	25 - 34	2.5 - 3.4	
Rear frame	16 - 24	1.6 - 2.4	
Silencer	6 - 10	0.6 - 1.0	

G Greasing (grease)

ENGLISH